EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 03-20

☐ Other ☐ Amendment Number:

Contract Number	Contract Period	Title of Work Assignment/SF Site Name
EP-C-15-012	08/01/2015 To 07/31/2019 Base Option Period Number 3	Sustainable Materials Mgmt

Contractor	Specify Section and paragraph of Contract SOW
CSRA LLC	3.2, 3.4

Purpose:
- [X] Work Assignment
- [ ] Work Assignment Amendment
- [ ] Work Plan Approval
- [ ] Work Assignment Close-Out
- [ ] Incremental Funding

Period of Performance: From 08/01/2018 To 07/31/2019

Comments:
In accordance with clause B.1 of the contract, immediate start is hereby approved for this work assignment beginning on August 1, 2018. If the work plan is not approved within 35 calendar days after receipt of the work plan, the contractor shall stop work.

☐ Superfund — Accounting and Appropriations Data — [X] Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*): ☐

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

Contract Period:	Cost/Fee:	LOE:
08/01/2015 To 07/31/2019		0
This Action:		3,523
Total:		3,523

Work Plan / Cost Estimate Approvals

	Cost/Fee	LOE:
Contractor WP Dated:		
Cumulative Approved:		

Work Assignment Manager Name: Wesley Ingwersen (Signature) (Date)	Branch/Mail Code:	
	Phone Number:	513-569-7602
	FAX Number:	
Project Officer Name: Nancy Parrotta (Signature) (Date)	Branch/Mail Code:	
	Phone Number:	202-564-5260
	FAX Number:	
Other Agency Official Name (Signature) (Date)	Branch/Mail Code:	
	Phone Number:	
	FAX Number:	
Contracting Official Name: Donna Reinhart (Signature) (Date)	Branch/Mail Code:	
	Phone Number:	513-487-2114
	FAX Number:	

PERFORMANCE WORK STATEMENT
CSRA EP-C-15-012
Work Assignment No. 03-20
Period of Performance: 8/1/18-7/31/19

I. ADMINISTRATIVE:

A. Title: Sustainable Materials Management Life Cycle Assessment (SMM LCA)

B. Work Assignment Contracting Officer's Representative (WACOR):

Wesley Ingwersen
National Risk Management Research Laboratory/Land and Materials Management Division/Life Cycle Decision Support Branch
26 W. Martin Luther King Dr.
Cincinnati OH 45268
513-569-7602
Ingwersen.wesley@epa.gov

Alternate WACOR:

David Meyer
National Risk Management Research Laboratory/Land and Materials Management Division/Life Cycle Decision Support Branch
26 W. Martin Luther King Dr.
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C. Quality Assurance:

Task(s) 1 through 7 in this WA require the use of primary and/or secondary data, model development and application, and the development of software, as did work performed under WA 00-20, WA-00-21, and WA 01-20. Consistent with the Agency's Quality Assurance (QA) requirements, the contractor prepared a Project Specific Quality Assurance Project Plan (PQAPP) for WA 00-20. Since no significant changes in data collection are expected between WA 00-20 and the work described in Tasks 1-4, the PQAPP for WA 00-20, G-STD-0030017-QP-1-1, approved 08/30/2016, shall be used for Tasks 1-4. The Work Assignment Manager will revise this QAPP for the review of the contractor. Task 5 in this WA is a continuation of Tasks 1-5 under WA-01-21. The QAPP developed for that task, G-STD-0030044-QP-1-1, shall be used for Task 5. Task 6 in this WA is a continuation of Task 6 under WA-01-21. The QAPP developed for that task, G-STD-0030965-QP-1-0 approved on 4/7/2017, shall be used for Task 6. The Work Assignment Manager will draft a new QAPP for Task 7 to be reviewed and approved by the contractor and EPA before commencement of research activities.

D. Background:

As communities seek to become more sustainable, they are faced with decisions surrounding waste collection and disposal, transportation options, land use planning, and infrastructure needs, all of which can affect climate change and water resources. These decisions are made with the understanding that effective and sustainable environmental protection is linked to human health and quality-of-life, economic opportunity, and community vitality. For example, the processing and production of materials in these communities provide economic opportunity, but also represent sources of environmental emissions. Further, there is a recognized environmental justice component to sustainable materials management (SMM): minority populations and/or

low-income populations bear a disproportionate amount of adverse health and environmental effects associated with the life cycle of the materials of commerce – from resource extraction, material processing/production, transportation, use, recycling, and on to ultimate disposal/destruction. In order to conserve land, minimize land contamination, minimize emissions to air and water, and yield equitable co-benefits throughout a community, materials must be extracted, manufactured and used effectively and efficiently, their application reduced, reused, recycled, and their disposal/management focused on a life cycle basis while preserving their function. The Life Cycle Decision Support Branch (LCDSB) within the National Risk Management Research Laboratory (NRMRL) of US EPA's Office of Research and Development (ORD) is developing the necessary models and tools to support the use of life cycle assessment (LCA) by the Office of Solid Waste and Emergency Response (OSWER), the Office of Water (OW), the Office of Air and Radiation (OAR), and Regional Offices to promote SMM within states and communities.

II. OBJECTIVE:

The contractor shall support the priorities and requirements of the Life Cycle Decision Support Branch as related to the SMM activities.

This work assignment supports the mission of EPA and authority as described in the Resources Conservation and Recovery Act (RCRA). The Sustainable Materials Management strategy designed to meet part of EPA's obligations under this statute describes the need for a life cycle approach.

The intended audience for this project are regions, states and communities seeking to implement sustainable materials management strategies that use a life cycle perspective, as well as other parties looking for data and methods to support life cycle assessment.

This work will be completed commensurate with Sections 3.2 and 3.4 of the Contract Level PWS.

LOE: 3523 HOURS

III. TASK DETAIL:

The contractor shall perform the following tasks:

Task 0 - Work Plan Submission and QAPP review:
The contractor shall prepare a detailed work plan and budget for the accomplishment of the indicated tasks in accordance with the clause Work Assignments (EPAAR 1552.211-74). The work plan shall include a description of (a) proposed staff, (b) the number of hours and labor classifications proposed for each task, broken down to task level, to include both prime contractor and subcontractor labor, and (c) a list of deliverables, with due dates and schedule for deliverables.

The contractor shall review and approve the revision to QAPP, G-STD-0030017-QP-1-1, applicable to Tasks 1-4, to be prepared by the WACOR. Until that time work may proceed on Tasks 1-4 according to the existing QAPP. The contractor shall review and approve the new QAPP, to be prepared by the WACOR, for Task 7, before work proceeds on that task.

The contractor shall use the QAPPs described above in Section I-C to ensure the quality of primary and/or secondary data and any software developed to complete these tasks.

In addition, the contractor shall prepare a statement indicating that this WA is a continuation of WA 2-20. This task also includes monthly progress and financial reports, which are to be submitted pursuant to Attachment 2 of the contract. Monthly financial reports must include a table with the invoice level of effort (LOE) and costs broken out by the tasks in this WA. The monthly progress report shall indicate, in a separate QA section, whether significant QA issues have been identified and how they are being resolved. The contractor shall immediately notify the Contract Level Contracting Officer's representative (CLCOR)Project Officer and EPA WACOR any changes to the collection and analysis of the data is needed and prepare a PQAPP accordingly.

The contractor shall immediately alert the EPA WACOR to any anticipated event under the work assignment which may result in incurring an estimated $20,000 or more cost, funded by EPA, specific to that event (e.g., meeting or training). Those costs would include travel of prime and consultant personnel, planning and facilitation costs, audio/visual, and rental of venue costs. The EPA WACOR will prepare approval internal paperwork for the event and will advise the contractor when appropriate signatures have been obtained. At that point, effort can proceed for the event. If the event is being sponsored by another EPA organization, the organization providing the planning is responsible for the approval.

Task 1 – USEEIO Updates, Extensions, and Automation

USEEIO is a model developed under the previous periods of performance in this work assignment. USEPA working with the contractor has also developed state versions of USEEIO. The model combines economic and environmental data at a resolution of ~390 goods and services to characterize direct and indirect environmental and economic effects of those goods and services and associated materials. The economic data are compiled in the form of input-output tables and the environmental data in the form of satellite tables. Recently the modeling effort has evolved from spreadsheets to using code (primarily R) to create the satellite tables and input-output tables, which is archived at https://github.com/usepa/useeio. This task is reserved to make updates to those tables, add additional satellite table and input-output table extensions, and further automate the creation of USEEIO and state-based models. These updates may include:

- Updates to the underlying input-output tables based on updated BEA and US Census data
- Extensions of the input-output and satellite tables to model other world regions
- Updates to the environmental satellite accounts based on updated or newly identified sources of environmental data
- Incorporation of new satellite tables for additional environmental resources/emissions
- Incorporation of improved data for state models
- Automation for creation of satellite tables using code

- Data collection for modeling various SMM-related scenarios in USEEIO and state-models
- Addition of uncertainty ranges for satellite table and economic transaction data
- Improved documentation of the model

The specific updates will be identified through written technical direction by the WACOR.

Deliverables:

- USEEIO 2.0 using automated model building approach, incorporating the most recent data available for building the satellite tables
- Code for creating multi-region state-based models for a user-selected state, at the same detailed level of resolution as the USEEIO 2.0.
- Documentation of USEEIO 2.0 updates and state-based models in the form of drafts of sections of peer-reviewed manuscripts and conference presentation slides

Task 2 – Data Analysis Support

As provided by written technical direction from the WACOR, the contractor shall provide general support to EPA LCA researchers on performing data analysis tasks for life cycle assessment for the duration of the period of performance. Data analysis work should be performed primarily in the Python programming languages, and code should be documented and designed for reuse. High-level consulting on the organization and management of code for data analysis shall be provided at the beginning of each data analysis that requires more than 40 hrs of labor to maximize reusability and minimize redundancy in the coding effort.

Deliverable: Technical support for data analysis for the duration of the period of performance.

Task 3 – Support for Scenario Modeling for SMM Strategies in USEEIO

The USEEIO model described in Task 1 provides baseline results for the US or a state. The model was developed with the intention of modeling scenarios involving potential changes to the baseline system through implementation of SMM strategies. Such changes may include technological, structural, or behavior changes in industry or by consumers. Because such changes could potentially reverberate throughout the US or state system, modeling of these changes can be complex. Particularly, because USEEIO is based on underlying economic input-output tables, modeling such scenarios can require econometric methods. In this task, EPA seeks expertise from economists specializing in modeling changes within the input-output framework. EPA will work with the contractor to define generic scenario types and provide insight on how well these scenario types can be modeled within USEEIO. The contractor shall then propose generalized methods that can be used to model those scenarios, and provide support for modeling example scenarios provided by EPA.

Deliverable: Documentation in the form of sections of a peer-review manuscript describing methods for scenario modeling in USEEIO and implementation of one or more examples.

Task 4 – USEEIO API and IOMB Support

In the previous periods of performance for this work assignment, the contractor developed a program for assembly and modeling of the IO models like USEEIO called the IO Model Builder, or IOMB (https://github.com/USEPA/IO-Model-Builder). The contractor has also developed an

API that takes the models from the IOMB in the form of Python data types, and makes the results and details of the models publicly available via an API. This web API is used by the the SMM tool suite. EPA has a need for continual support for the IOMB and the associated web API, including enhancements that are anticipated in order to provide results needed for USEEIO analysis or the SMM tool suite. EPA will provide detailed requests of updates for the IOMB and the web API, based on stakeholder and management direction, during the period of performance.

Deliverable: Improvements to the IOMB and the associated web API as specified by the WACOR's written technical direction.

Task 5 – openLCA Software and Data Format Enhancements

openLCA is the primarily LCA modeling software used by EPA ORD for LCA studies as well as for LCA data preparation and sharing via the Federal LCA Commons. EPA has supported and collaborated on improvements to openLCA and built additional applications upon openLCA (e.g. WARM, SMM Tool) since 2012. There is a need to make continual improvement and updates to openLCA software to improve its functionality and the ways that it manages and describes data. Specifically, as the international initiative Global LCA Data Access (GLAD) has made recommendations on metadata improvements for LCA data that could be incorporated into openLCA software and the openLCA JSON-LD data format. The EPA is developing an improved master elementary flow list and nomenclature, and all the data and its functionality need to be made fully useable in openLCA software and the JSON-LD format. EPA previously worked with GreenDelta to make improvements to data quality assessment in openLCA. Further improvements are foreseen to be needed to assess model and LCIA data quality. Finally, the advance to openLCA directed by EPA over the last 5 years have not been documented in the peer-review literature, and the contract shall assist EPA with that documentation. Other enhancements to openLCA and the openLCA JSON-LD format shall be made at the request of the EPA WACOR.

Deliverables:

- openLCA software and JSON-LD formats with metadata improvements and improved handling of elementary flows
- Improved data quality management in openLCA software
- Documentation support of openLCA and format enhancements written for one or more peer-review manuscript

Task 6 – Ontology Development Support for the Use of Life Cycle Inventory Data in Exposure Modeling

EPA is currently developing methods to incorporate life cycle inventory data into exposure models for chemical assessment under the Toxic Substance Control Act (TSCA). These efforts involve the use of a resource description framework (RDF) to link data using a vocabulary of data descriptors, often called ontologies or domain models, which give data context and meaning. EPA researchers, as subject matter experts, have been developing ontology pieces to support the seamless integration of data. There is a need to have an ontology expert review and help revise new ontology pieces to make sure they are consistent, both with one another and with existing EPA ontologies. Therefore, the contractor shall provide ontology review and revision for a minimum of two ontology pieces up to a maximum of four ontology pieces covering life cycle

impact assessment data, product manufacturing data, product use data, and product disposal data. Ontology pieces will be designed to connect the data with near and far-field exposure modeling concepts. The EPA WACOR shall provide any necessary reference EPA ontologies upon request for a review.

Milestones

1. Due 90 days after receipt of Work Assignment:
A draft ontology for the first of the four concepts requested by the WACOR with example data to demonstrate its use.

2. Due 120 days after receipt of Work Assignment:
A draft ontology for the second of the four concepts requested by the WACOR with example data to demonstrate its use.

3. Due 150 days after receipt of Work Assignment:
A draft ontology for the third of the four concepts requested by the WACOR with example data to demonstrate its use. If the WACOR does not make such a request, this milestone will not be applicable.

4. Due 180 days after receipt of Work Assignment:
A draft ontology for the fourth of the four concepts requested by the WACOR with example data to demonstrate its use. If the WACOR does not make such a request, this milestone will not be applicable.

Deliverable:
Final ontology pieces for all concepts requested by the WACOR.

Task 7 - Exploring Options for a More Efficient LCA Data Pipeline

The EPA has been collaborating with other Federal Agencies, the Global Network of LCA databases (GLAD), and the wider LCA community in developing tools and systems to enable and improve life cycle inventory data availability and interoperability. This task builds upon that history to further improve the LCA data creation process and data interoperability. However, there is a need to make this process more robust and efficient – to improve the LCI data pipeline. The predominant pathway used by EPA and some of the other federal agencies has been to create unit process data in an Excel template (the Federal LCA Commons Life Cycle Inventory template), and import those data into openLCA software for future editing and for linkage/ harmonization with existing data. This pathway provides one option but does not provide the best pathway for all types of unit processes. Tools have not yet been developed to include the development of full product systems to enable system analysis.

There is not a fully described procedure for creating life cycle inventory data in use by the Federal LCA Commons working group. Various guidelines and metadata requirements have recently been adopted for LCI, and an elementary flow list is being created. But a challenge remains to efficiently integrate these guidelines into the LCI development procedure.

In this task, the contractor shall explore ways to create and combine life cycle inventory data to create complete and fully-annotated life cycle models or product systems that are capable of generating life cycle results with a provided impact method. The models should be able to be imported into openLCA software.

Using a sample set of complete and incomplete LCI processes and full product system models, various pathways and data formats shall be tested in a controlled testing and evaluation procedure like what was done to test Federal LCI data interoperability (Ingwersen 2016).

EPA will provide the contractors with identify set of data sources, but these are expected to include: existing unit processes in the Federal LCA Commons Life Cycle Inventory template;existing LCI data in JSON-LD format such as USEEIO, LCI exported from openLCA software; LCI downloaded from the GLAD prototype, chemical inventory data generated using EPA's rapid LCI approach in RDF format, and potentially data exported from other software (e.g. Brightway, SimaPro, Gabi). This shall include partially complete unit processes (incomplete in terms of metadata), complete unit processes, and full product systems.
The contractor working with EPA shall create a set of metrics to use for testing the efficacy of data creation and transfer into LCA software, including such issues as format compatibility, ability to be converted, harmonized, completeness of data transferred, sufficient metadata inclusion, etc.
To accomplish this task, new prototype procedures (scripts) may be developed to test data combination and conversion. Some of the exploratory data formats should be existing formats, including ILCD and JSON-LD formats. Other possibilities are extending the formats or defining new formats. Consideration shall be given to a product system description roadmap recently published by a SETAC working group (Kuczenski et al. 2018). This could include testing of one or more prototypes for product system schemas.
The contractor is encouraged to draw upon existing scripts and tools available in open repositories like github, as well as develop or test new ideas, within the time available.The contractor shall work with EPA to agree to all data and existing datasets to be used in the evaluation, the pathways, tools and data formats/schemas to be used, and the metrics to be used to evaluate their effectiveness, and roles of all team members, before commencing the evaluation and documentation of the results.
EPA will provide file sharing and version control system resources to facilitate collaboration.

Deliverables
All schemas, scripts, or tools used to develop the project shall be posted to the version control system specified by EPA.

A draft article for a peer-review journal shall be provided describing the procedures and the test results. The article may encompass all testing or only include a subset of testing and analysis most suitable for an international community of practitioners.

Reference
Ingwersen WW (2015) Test of US federal life cycle inventory data interoperability. Journal of Cleaner Production 101:118-121. doi:http://dx.doi.org/10.1016/j.jclepro.2015.03.090
Kuczenski B, Marvuglia A, Astudillo MF, Ingwersen WW, Satterfield B, Evers DP, Koffler C, Navarre T, Amor B, Laurin L (2018) LCA capability roadmap—Product system model description and revision. International Journal of Life Cycle Assessment doi:10.1007/s11367-018-1446-8

IV. SCHEDULE OF DELIVERABLES:

Specific deliverables, by Task, are detailed in the table below. All work will be determined by technical direction.

This work requires experience in the USEEIO model, advanced data analysis using R or Python, the IO Model Builder, and ontology development for chemical lineage modeling.

TASK No.	DELIVERABLE	DATE DUE TO EPA
Task 0 - Workplan Submission		
Workplan and budget		According to contract
Monthly progress reports		Monthly
Task 1 - USEEIO Updates, Extensions, and Automation		
USEEIO 2.0		6/30/2019
State model creation code		6/30/2019
Documentation of USEEIO improvements		7/31/2019
Task 2 – Data Analysis Support		
Technical support for data analysis in response to each request		To be determined by written technical direction.
Task 3 – Support for Scenario Modeling for SMM Strategies in USEEIO		
Documentation in the form of sections of a peer-review manuscript describing methods for scenario modeling in USEEIO		June 30, 2019
Task 4 – USEEIO API and IOMB Support		
Improvements to the IOMB and the associated web API		To be determined by written technical direction; an exact date cannot be determined prior to receiving stakeholder or management feedback
Task 5 – openLCA Software and Data Format Enhancements		
openLCA software and JSON-LD formats with metadata improvements and improved handling of elementary flows .		To be determined by written technical direction; an exact date cannot be determined prior to receiving stakeholder feedback and completion of Fed LCA

	Master Elementary Flow List
Improved data quality management in openLCA software	To be determined by written technical direction; an exact date cannot be determined prior to determination of data quality methods
Documentation support of openLCA and format enhancements written for peer-review	June 30, 2019
Task 6 – Ontology Support for Chemical Lineage Modeling	
Exposure ontology components	July 30, 2019
Task 7 - Exploring Options for a More Efficient LCA Data Pipeline	
Draft article for a peer-review journal	200 days after commencement of task

V. MISCELLANEOUS:

Software Application Files and Accessibility:
Software application files, if delivered to the Government, shall conform to the requirements relating to accessibility as detailed to the 1998 amendments to the Rehabilitation Act, particularly, but not limited to, § 1194.21 Software applications and operating systems and § 1194.22 Web-based intranet and internet information and applications. See: http://www.section508.gov/

The EPA WACOR shall identify which of delivered products will require 508 compliance.

VI. TRAVEL

The contractor should anticipate up to 6 trips over the duration of the performance period for in-person meetings or conferences; to be determined at the discretion of the WACOR. Travel will be directly related to the scope of this Work Assignment and support advancement of the work under Tasks 1, 2, 5, and 6 as well as the EPA's Mission to ensure protection of human health and the environment.

VII. MEETINGS, CONFERENCES, TRAINING EVENTS, AWARD CEREMONIES AND RECEPTIONS

All appropriate clearances and approvals required by Agency policy in support of any and all conference related activities and expenses, including support of meetings, conferences, training events, award ceremonies and receptions, including the form 5170 for all meetings costing more

than $20,000, shall be obtained by the EPA CLCOR as needed and provided to the Contracting Officer (CO). Work under conference related activities and expenses shall not occur until this approval is obtained and provided by the EPA CLCOR.

VIII. CONTRACTOR IDENTIFICATION

Contractor personnel shall always identify themselves as contractor employees by name and organization and physically display that information through an identification badge. Contractor personnel are prohibited from acting as the Agency's official representative. The contractor shall refer any questions relating to the interpretation of EPA policy, guidance, or regulation to the CO, CLCOR and/or WACOR.

IX. PRINTING

All copying and printing shall be accomplished within the limitations of the printing clause of the contract.

X. TECHNICAL DIRECTION

The Contract level COR or an authorized individual is permitted to provide technical direction. Technical direction must be within the statement of work of the contract and includes: (1) Direction to the contractor which assists the contractor in accomplishing the Statement of Work, (2) Comments on and approval of reports or other deliverables. Technical direction will be issued in writing or confirmed in writing within five (5) calendar days after verbal issuance. One copy of the technical direction memorandum will be forwarded to the CO and the CLCOR.

XI. QUALITY ASSURANCE SURVEILLANCE PLAN:

All task(s) identified in the performance work statement above are subject to review and approval by the EPA WACOR based on the general guidelines of the contract quality assurance surveillance plan (Attachment 4 of the contract) regarding: Programmatic, cost control, timeliness/deliverables, and document development standards.

EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 03-20

☐ Other ☒ Amendment Number: 000001

Contract Number	Contract Period	Title of Work Assignment/SF Site Name
EP-C-15-012	08/01/2015 To 07/31/2019 Base Option Period Number 3	Sustainable materials Mgmt

Contractor	Specify Section and paragraph of Contract SOW
CSRA LLC	3.2, 3.4

Purpose:
- ☐ Work Assignment
- ☒ Work Assignment Amendment
- ☐ Work Plan Approval
- ☐ Work Assignment Close-Out
- ☐ Incremental Funding

Period of Performance: From 08/01/2018 To 07/31/2019

Comments:
The purpose of amendment 1 to CSRA (EP-C-15-012) WA 03-20 is to increase the CPFF NTE ceiling from $100,000 to $200,000.

☐ Superfund — Accounting and Appropriations Data — ☒ Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*) ☐

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code
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Contract Period:	Cost/Fee:	LOE:
08/01/2015 To 07/31/2019		3,523
This Action:		0
Total:		3,523

Work Plan / Cost Estimate Approvals

Contractor WP Dated:	Cost/Fee	LOE:
Cumulative Approved:	Cost/Fee	LOE:

Work Assignment Manager Name: Wesley Ingwersen (Signature) (Date)	Branch/Mail Code: Phone Number: 513-569-7602 FAX Number:
Project Officer Name: Nancy Parrotta (Signature) (Date)	Branch/Mail Code: Phone Number: 202-564-5260 FAX Number:
Other Agency Official Name (Signature) (Date)	Branch/Mail Code: Phone Number: FAX Number:
Contracting Official Name: Donna Reinhart (Signature) (Date)	Branch/Mail Code: Phone Number: 513-487-2114 FAX Number:

EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 03-20

☐ Other ☒ Amendment Number: 000002

Contract Number	Contract Period	Title of Work Assignment/SF Site Name
EP-C-15-012	08/01/2015 To 07/31/2020 Base Option Period Number 3	Sustainable Materials Mgmt Lif

Contractor	Specify Section and paragraph of Contract SOW
CSRA LLC	3.2, 3.4

Purpose:
- ☐ Work Assignment
- ☒ Work Assignment Amendment
- ☐ Work Plan Approval
- ☐ Work Assignment Close-Out
- ☐ Incremental Funding

Period of Performance: From 08/01/2018 To 07/31/2019

Comments:
The purpose of this amendment 2 to CSRA (EP-C-15-012) WA 03-20 is to raise the CPFF NTE ceiling to $325,000.

☐ Superfund — Accounting and Appropriations Data — ☒ Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*) ☐

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Washington, DC 20460

Work Assignment

Work Assignment Number: 03-20

☐ Other ☒ Amendment Number: 000003

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Contractor	Specify Section and paragraph of Contract SOW
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- ☐ Incremental Funding

Period of Performance: From 08/01/2018 To 07/31/2019

Comments:
The purpose of this amendment 3 to CSRA (EP-C-15-012) WA 03-20 is to raise the CPFF NTE ceiling by $60,000 to $385,000.

☐ Superfund — Accounting and Appropriations Data — ☒ Non-Superfund

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Cumulative Approved:	Cost/Fee	LOE:

Work Assignment Manager Name: Wesley Ingwersen (Signature) (Date)	Branch/Mail Code: Phone Number: 513-569-7602 FAX Number:
Project Officer Name: Nancy Parrotta (Signature) (Date)	Branch/Mail Code: Phone Number: 202-564-5260 FAX Number:
Other Agency Official Name: (Signature) (Date)	Branch/Mail Code: Phone Number: FAX Number:
Contracting Official Name: Donna Reinhart (Signature) (Date)	Branch/Mail Code: Phone Number: 513-487-2114 FAX Number:

EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 03-22

☐ Other ☐ Amendment Number:

Contract Number	Contract Period	Title of Work Assignment/SF Site Name
EP-C-15-012	08/01/2015 To 07/31/2019 Base Option Period Number 3	OGWDW Strat Plan, NDWAC, PFAS

Contractor	Specify Section and paragraph of Contract SOW
CSRA LLC	2.1, 2.15, 2.16

Purpose:
- ☒ Work Assignment
- ☐ Work Assignment Amendment
- ☐ Work Plan Approval
- ☐ Work Assignment Close-Out
- ☐ Incremental Funding

Period of Performance: From 08/01/2018 To 07/31/2019

Comments:
In accordance with clause B.1 of the contract, immediate start is hereby approved for this work assignment beginning on August 1, 2018. If the work plan is not approved within 35 calendar days after receipt of the work plan, the contractor shall stop work.

☐ Superfund — Accounting and Appropriations Data — ☒ Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*) ☐

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

Contract Period: 08/01/2015 To 07/31/2019	Cost/Fee:	LOE: 0
This Action:		1,380
Total:		1,380

Work Plan / Cost Estimate Approvals

Contractor WP Dated:	Cost/Fee	LOE:
Cumulative Approved:	Cost/Fee	LOE:

Work Assignment Manager Name: Debbie Newberry (Signature) (Date)		Branch/Mail Code: Phone Number: 202-564-1415 FAX Number:
Project Officer Name: Nancy Parrotta (Signature) (Date)		Branch/Mail Code: Phone Number: 202-564-5260 FAX Number:
Other Agency Official Name (Signature) (Date)		Branch/Mail Code: Phone Number: FAX Number:
Contracting Official Name: Donna Reinhart (Signature) (Date)		Branch/Mail Code: Phone Number: 513-487-2114 FAX Number:

WORK ASSIGNMENT
PERFORMANCE WORK STATEMENT (PWS)
CSRA

Contract No. EP-C-15-012
Work Assignment: WA-03-22

WACOR:	**Name:**	**Debbie Newberry**
	Office:	**Office of Ground Water and Drinking Water**
	Phone:	**202-564-1415**
	E-mail:	**newberry.debbie@epa.gov**
	Mail code:	**4608T**
	Street Address:	**1200 Pennsylvania Ave., NW**
	City, State, Zip:	**Washington, DC 20460**

Alternate WACOR

Name:	**Ashley Greene**
Office:	**Office of Ground Water and Drinking Water**
Phone:	**202-566-1738**
E-mail:	**greene.ashley@epa.gov**
Mail code:	**4608T**
Street Address:	**1200 Pennsylvania Ave., NW**
City, State, Zip:	**Washington, DC 20460**

LOE: hours: 1380

Period of Performance: August 1, 2018 through July 31, 2019

Title: Office of Ground Water and Drinking Water Strategic Planning, Drinking Water Contaminant Challenges Support, and National Drinking Water Advisory Council Meeting Support

PWS Sections 2.1, 2.15, 2.16

I. PURPOSE:

The purposes of this work assignment are to support the Office of Ground Water and Drinking Water (OGWDW) in developing a five-year strategic plan for the OGWDW, to provide support for the National Drinking Water Advisory Council (NDWAC) meeting, and to support the OGWDW on priority issues related to addressing PFAS (per- and polyfluoroalkyl substances) and other drinking water contaminant challenges for strategic planning purposes. The strategic plan and support for drinking water contaminant challenges will chart the course for advancing EPA's and the OGWDW's priorities and mission to protect human health and the environment.

Strategic planning is important to an organization because it provides a sense of direction and outlines

measurable goals. Strategic planning is a tool that is useful for guiding day-to-day decisions and also evaluating progress and changing approaches when moving forward. The Plan will identify the measurable environmental and human health outcomes that the public can expect in the near-term and over the next five years and will describe how the Office intends to achieve those results. The Plan represents a commitment to our core values of science, transparency and the rule of law in managing our program. This planning will also expand the impact of the OGWDW by ensuring complementary EPA offices and programs understand its mission and goals.

EPA has been engaging leaders and relevant stakeholders on priority issues related to addressing PFAS and other drinking water contaminant challenges for strategic planning purposes. As a part of these efforts EPA will continue to engage these stakeholders and develop drinking water risk communications information and messaging. Additionally, OGWDW will develop a PFAS Management Plan to:

1. Provide information about ongoing efforts to develop tools to characterize the risks from PFAS and to reduce exposure;
2. Identify existing and near-term actions needed to address challenges currently facing states and local communities;
3. Provide solutions to support states, tribes, and communities; and
4. Develop risk communication information to help address public concerns.

II. BACKGROUND:

EPA's FY 2014 – 2018 Strategic Plan identifies five strategic goals to guide the Agency's work. The second goal, Protecting America's Waters specifically identifies achieving and maintaining standards and guidelines protective of human health in drinking water supplies, fish, shellfish, and recreational waters, and protect and sustainably manage drinking water resources as a goal. In support of the Agency's goal for Protecting America's Water, the mission of the OGWDW, together with states, tribes, and many partners, will protect public health by ensuring safe drinking water and protecting our ground water.

This mission will be accomplished by implementing the following principles:

- Prevention as an effective approach;
- Risk-based priority setting for new and existing regulations, based on sound science, quality data in reliable databases, and quality methods and standards;
- Partnership and involvement of public and private organizations, citizens, and communities;
- Flexibility and effectiveness in implementation while maintaining a national public health baseline;
- Accountability of all parties through public participation and accessible information; and results documented and presented clearly.

Work detailed in Section IV (Tasks 3, 4, and 5) of this PWS is a continuation of work initiated during the Option Period 2.

III. QA REQUIREMENTS:

The tasks in this Work Assignment (WA) do not require environmental measurements. Consistent with the Agency's quality assurance (QA) requirements, the contractor does not need to supplement the

approved Quality Management Plan (QMP) of the contract or prepare a Project-Specific Quality Assurance Project Plan (PQAPP).

IV. DETAILED TASK DESCRIPTION:

All direction under this WA will be provided as written technical direction from the WACOR as appropriate. If provided first as verbal technical direction to the contractor, it will be confirmed in writing within 5 calendar days, with a copy to the Contract Level Contracting Officer's Representative (CL COR) and the Contracting Officer (CO), and is subject to the limitations of the technical direction contract clause. Each initial deliverable shall be provided to the EPA WACOR and EPA CL COR in draft form for review and comment. The contractor shall incorporate WACOR review comments into revisions of the drafts. All drafts and final reports shall be approved by the WACOR.

The contractor shall perform the following tasks:

Task 0: Work Plan, Progress Evaluations, and Monthly Progress Reports

LOE: 170 hours

The contractor shall develop a work plan that describes how each task will be carried out. The work plan shall include a schedule, staffing plan, level of effort (LOE), and cost estimate for each task, the contractor's key assumptions on which staffing plan and budget are based, and qualifications of proposed staff. In addition, the workplan shall include the requirement that all electronic and information technology (EIT) and all EIT deliverables be Section 508 compliant in accordance with the policies referenced at http://www.epa.gov/accessibility/. If a subcontractor(s) is proposed and subcontractors are outside the local metropolitan area, the contractor shall include information on plans to manage work and contract costs. In addition, the work plan shall specify that a Supplemental Project Specific Quality Assurance Project Plan (SQAPP) appending the Contract Level QAPP or a PQAPP is not required. This task also includes monthly progress and financial reports. Monthly financial reports must include a table with the invoice LOE and cost amount broken out by the tasks in this WA.

Task 1: Support for the Office of Ground Water and Drinking Water in Developing a Five Year Strategic Plan

LOE: 30 hours

To support these efforts, the contractor shall:

1. Prepare agendas for, and facilitate three meetings to be located in the Washington DC area (For planning purposes the meetings will last approximately 5 hours)
2. Produce written notes of each meeting
3. Participate in up to four one- hour conference calls with OGWDW during the development of the plan outline
4. Develop a strategic plan outline for the Office (For planning purposes this outline should be approximately 10 pages in length)

Deliverables:

1. Agendas for each meeting
2. Written notes of each meeting
3. Draft Outline of OGWDW Strategic Plan

Task 2: Support to EPA OGWDW for the NDWAC meeting, which will be held December 4, 2018, through noon on December 6, 2018, in the Washington, DC, metro area.

LOE: 250 hours

The contractor shall provide support to EPA OGWDW for the NDWAC meeting, which will be held December 4, 2018, through noon on December 6, 2018, in the Washington, DC, metro area:

The NDWAC was established in accordance with the provisions of the Federal Advisory Committee Act (FACA), 5 U.S.C. App.2 § 9 (c). NDWAC is in the public interest and supports the EPA in performing its duties and responsibilities. Congress created the Council on December 16, 1974 as part of the Safe Water Drinking Act (SDWA) of 1974, P.L. 93-523, 42 U.S.C. 300j.5.

The NDWAC is charged to provide advice, information and recommendations on matters related to activities, functions, policies, and regulations of EPA under the SDWA. The advice and recommendations are then carefully considered by the EPA and may become a factor in the OGWDW strategic planning process.

The scope of this effort includes pre-meeting coordination with the Designated Federal Officer, note taking during the meeting, developing a draft meeting summary for EPA and developing a final summary that is 508 compliant.

1. Pre-meeting coordination with the Designated Federal Officer – In support of the pre-meeting effort, the contractor shall meet with the DFO to determine that specific note tasking format to be used, develop templates for the notes, attendance, and daily summaries, and the types of discussion to be prioritized for recording in the notes. For planning purposes, this is expected to take 1 hour to complete.
2. Participation and note taking during the NDWAC Meeting - The contractor shall provide two technical staff on-site for the 1 1/2–day meeting. During the proceedings, the contractor shall rotate note taking responsibilities to ensure full coverage. Prior to the proceedings on day 2, the contractor shall provide a written summary of the prior day's meeting.
3. Post Meeting Support – Within 2-weeks of the NDWAC meeting, the contractor shall deliver a draft-meeting summary. This document shall include, at a minimum, a list of meeting participants (data to be collected by CSC), major issues discussed, and record of decisions made. Finalized summary for NDWAC meeting shall be 508 compliant.

Deliverables:

1. Daily summary reports (1)
2. Draft NDWAC meeting summary and Final NDWAC meeting summary

Task 3: Support for the Office of Ground Water and Drinking Water in engaging national and community leaders on PFAS and other drinking water contaminant challenges for strategic planning purposes

LOE: 320 hours

To support these efforts, the contractor shall:

1. Provide expert to offer framework recommendations and technical support (not logistical) to OGWDW prior to community engagement sessions including:
    a. Assisting in the development of objectives and format, draft agendas, discussion questions, and briefing documents/materials for the community engagement sessions. Community engagement sessions will be focused on the following topics: 1) identifying PFAS in communities; 2) solutions to address PFAS; 3) communicating PFAS.
    b. Participating in EPA-led preparatory sessions with relevant stakeholders in advance of the community engagement sessions.
2. As needed, provide 1 to 2 people to attend and provide professional support for community engagement sessions. There will be up to six 1 to 2-day community engagement sessions to be held from July through September 2018 in various locations throughout the country (for planning purposes, assume travel for three sessions and one person per session).
3. While EPA is not seeking consolidated group recommendations or direction from the community engagement sessions, the contractor shall, in concert with EPA, develop a synthesis of discussions, input, and actions based on overarching themes from notes (provided by EPA) for each individual community engagement session (for planning purposes, these should each be no longer than 5 pages).

Deliverables:

1. For up to six community engagement sessions, individual written synthesis analysis.
2. Review of community engagement sessions objectives, format, agendas, discussion questions, and other materials.

Other Deliverable Expectations:

Community Engagements Syntheses	2 weeks after meeting dates or receipt of meeting notes

Task 4: Support for the Office of Ground Water and Drinking Water in developing a PFAS Management Plan

LOE: 60 hours

Utilizing information and input obtained through all stakeholder comments (as provided by EPA) and the PFAS Management Plan outline, the contractor shall:

1. Work with OGWDW to draft PFAS Management Plan (for planning purposes, the plan should be approximately 10-15 pages).

Deliverables:

1. Develop draft PFAS Management Plan

Task 5: Support for the Office of Ground Water and Drinking Water in developing PFAS or other drinking water contaminant risk communication information

LOE: 550 hours

Building on previous strategy development work, to support these efforts, the contractor shall:

1. Provide an expert to, in concert with EPA, offer guidance and recommendations on PFAS or other drinking water contaminant risk communication including:
    a. Developing a strategy for the development of risk communication messages.
    b. Providing results of research and implementation of risk communication messaging strategy.
    c. Developing risk communication messages based on implementation of risk communication messaging strategy.
    d. Developing written, graphical, or electronic risk communication materials (e.g., fact sheets, infographics, videos) based on identified risk communication messages to address public concerns with PFAS or other drinking water contaminants.

Deliverables:

1. Written strategy on developing risk communication messages
2. Written results following implementation of risk communication messaging strategy
3. Develop risk communication messages (for planning purpose, assume up to 5 topics areas)
4. Develop risk communication materials (for planning purposes, assume up to 5 materials)

V. CONFERENCES AND WORKSHOPS

The contractor shall immediately alert the WACOR to any anticipated event under the work assignment which may result in incurring an estimated $20,000 or more cost, funded by EPA, specific to that event, meeting, training, etc. Those costs would include travel of both prime and consultant personnel, planning and facilitation costs, including all outlays for conference preparation, AV and rental of venue costs, etc. The EPA WACOR will then prepare for approval the internal paperwork for the event and will provide it to the CO. The CO will advise the contractor when appropriate signatures have been

obtained. At that point, effort can proceed for the event. If the event is being sponsored by another EPA organization, the organization providing the planning is responsible for the approval.

Any event which meets the definition of a "conference," with total net expenditures greater than $20,000, is required to submit EPA Electronic Form 5170 and Form 5170-A (with cost estimates/actuals). In the case the workflow system is down and CORs require emergency approval, they can submit EPA Form 5170 (PDF) (2pp, 93K) (with cost estimates) to conference@epa.gov.

VI. SCHEDULE/DELIVERABLE

- The contractor(s) shall send EPA all reports in accordance with the terms of the basic contract. All deliverables shall be submitted electronically on a CD or by email in Microsoft format (e.g., Word, Excel, Access, etc.), in addition to a hard copy submittal, as requested by the WACOR.
- The contractor shall provide a work plan as set out in the table below.
- All reports shall be provided first in draft form. Upon receipt of comment from the WACOR, the contractor shall revise the report and finalize the report accordingly.
- Finalized summary for NDWAC meeting shall be 508 compliant.

Due dates reflect the draft documents for WACOR consideration. Final deliverables are due no later than 15 days after receiving the WACOR's comments, unless the WACOR provides written technical direction indicating otherwise*

***Within five working days of receipt of EPA WACOR comments on Task 3, the contractor shall provide EPA with a final summary of the meeting.**

Deliverable	Due No Later Than
Task 0: Work Plan, Progress Evaluations and Monthly Progress Reports Work Plan Monthly Progress and Financial Reports	According to Contract

Task 1: Support for the Office of Ground Water and Drinking Water in Developing a Five Year Strategic Plan 1. Prepare agendas for based on information provided by EPA, and facilitate three meetings to be located in the Washington DC area (For planning purposes the meetings will last approximately 5 hours) 2. Produce written notes of each meeting 3. Participate in up to four one- hour conference calls with OGWDW during the development of the plan outline 4. Assist in developing a strategic plan outline for the Office (For planning purposes this outline should be approximately 10 pages in length)	Upon written technical direction.
Task 2: Support to EPA OGWDW for the NDWAC meeting, which will be held December 4, 2018, through noon on December 6, 2018, in the Washington, DC, metro area. 1. Conduct pre-meeting coordination with the Designated Federal Officer. (For planning purposes, the pre-meeting coordination should last 1 hour). 2. Perform note taking during the meeting. 3. Develop a draft meeting summary for EPA and develop a final summary that is 508 compliant.	Upon written technical direction.

Task 3: Support for the Office of Ground Water and Drinking Water in engaging national and community leaders on PFAS challenges for strategic planning purposes 1. Provide framework recommendations and technical support to OGWDW prior to community engagement sessions. 2. As needed, attend and provide professional support for community engagement sessions. There will be up to seven 1 to 2-day community engagement sessions (for planning purposes, assume travel for 3 meetings for one person). 3. Prepare a draft synthesis for each community engagement session based on all written notes (for planning purposes assume 6 meetings). 4. Participate in up to 12 one-hour conference calls with EPA in the development of community engagements planning and meeting syntheses.	Upon written technical direction.
Task 4: Support for the Office of Ground Water and Drinking Water in developing a PFAS Management Plan 1. Assist OGWDW in developing a draft of the PFAS Management Plan (for planning purposes, assume 2 drafts). 2. Participate in up to 10 one-hour conference calls with EPA during the development of the PFAS Management Plan.	Upon written technical direction.

Task 5: Support for the Office of Ground Water and Drinking Water in developing PFAS and other drinking water contaminant risk communication information 1. Develop risk communication messaging strategy. 2. Provide results of implementation of risk communication messaging strategy. 3. Develop risk communication messages (for planning purposes, assume up to 5 topic areas) 4. Develop risk communication materials (for planning purposes, assume up to 5 materials) 5. Participate in up to 12 one-hour conference calls with EPA during the development of the strategy and materials.	Upon written technical direction.
Task 6: Support for the Office of Ground Water and Drinking Water in engaging communities throughout the country on PFAS and other drinking water contaminant challenges 1. As needed, attend and provide professional support for community engagement sessions. There will be up to seven 1 to 2-day community engagement sessions (for planning purposes, assume travel for 4 meetings for one person). 2. Prepare a draft synthesis for each community engagement session based on all written notes (for planning purposes assume 7 meetings). 3. Participate in up to 10 one-hour conference calls with EPA in the development of meeting syntheses.	Upon written technical direction.

VII. REPORTING REQUIREMENTS

Monthly Progress Reports (including a progress evaluation discussion)

Financial Reports

VIII. GREEN MEETINGS AND CONFERENCES

The contractor shall follow the provision of EPA prescription 1523.703-1, *Acquisition of environmentally preferable meeting and conference services (May 2007),* for the use of off-site commercial facilities for an EPA event, whether the event is a meeting, conference, training session, or other purpose. Environmental preferability is defined at FAR 2.101, and shall be used when soliciting quotes or offers for meeting/conference services on behalf of the Agency.

For purposes of these meetings, EPA will provide meeting space.

IX. CONFERENCES AND WORKSHOPS

The contractor shall immediately alert the WACOR to any anticipated event under the work assignment which may result in incurring an estimated $20,000 or more cost, funded by EPA, specific to that event, meeting, training, etc. Those costs would include travel of both prime and consultant personnel, planning and facilitation costs, including all outlays for conference preparation, AV and rental of venue costs, etc. The EPA WACOR will then prepare for approval the internal paperwork for the event and will provide it to the CO. The CO will advise the contractor when appropriate signatures have been obtained. At that point, effort can proceed for the event. If the event is being sponsored by another EPA organization, the organization providing the planning is responsible for the approval.

Any event which meets the definition of a "conference," with total net expenditures greater than $20,000, is required to submit EPA Electronic Form 5170 and Form 5170-A (with cost estimates/actuals). In the case the workflow system is down and CORs require emergency approval, they can submit EPA Form 5170 (PDF) (2pp, 93K) (with cost estimates) to conference@epa.gov.

X. SOFTWARE APPLICATION AND ACCESSIBILITY (SECTION 508 REHABILITATION ACT AND AMENDMENTS)

Software Application files, if delivered to the Government, shall conform to the requirements relating to accessibility as detailed to the 1998 amendments to the Rehabilitation Act, particularly, but not limited to, § 1194.21 Software applications and operating systems and § 1194.22 Web-based intranet and internet information and applications. See: http://www.section508.gov/

Preferred text format:	MS Word, 8.0 or higher (Office 2007 or higher)
Preferred presentation format:	Power Point, Office 2007 or higher
Preferred graphics format:	Each graphic is an individual GIF file
Preferred portable format:	Adobe Acrobat, version 6.0

All delivered products intended for external EPA use will require 508 compliance.

QUALITY ASSURANCE SURVEILLANCE PLAN
for WSD's Mission Support

Quality Assurance Surveillance Plan

The requirements contained in this WA are considered performance-based, focusing on the Agency's desired results and outcomes. The contractor shall be responsible for determining the most effective means by which these requirements will be fulfilled. In order to fulfill the requirements, the contractor shall design innovative processes and systems that can deliver the required services in a manner that will best meet the Agency's performance objectives. This performance-based requirement represents a challenge to the contractor to develop and apply innovative and efficient approaches for achieving results and meeting or exceeding the performance objectives, measures, and standards described below. The Contractor's performance will be reflected in the positive or negative evaluation offered by the Agency in the Contractor Performance Evaluation (CPE) which is evaluated annually (per the "Contractor Performance Evaluation" clause in the contract). The WACOR shall submit a complete annual review of the areas outlined in the Quality Assurance Surveillance Plan (QASP), as included in Attachment 4 of the contract, which will then be utilized by the CLCOR in preparing the overall evaluations submitted annually in response to the Contractor Performance Evaluation requirements in the contract.

EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 03-25

☐ Other ☐ Amendment Number:

Contract Number	Contract Period	Title of Work Assignment/SF Site Name
EP-C-15-012	08/01/2015 To 07/31/2019 Base Option Period Number 3	Engineering Support Assistance

Contractor: CSRA LLC

Specify Section and paragraph of Contract SOW: 2.1

Purpose:
- [X] Work Assignment
- [ ] Work Assignment Amendment
- [ ] Work Plan Approval
- [ ] Work Assignment Close-Out
- [ ] Incremental Funding

Period of Performance: From 08/01/2018 To 07/31/2019

Comments:
In accordance with clause B.1 of the contract, immediate start is hereby approved for this work assignment beginning on August 1, 2018. If the work plan is not approved within 35 calendar days after receipt of the work plan, the contractor shall stop work.

☐ Superfund — Accounting and Appropriations Data — [X] Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*): ☐

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

Contract Period:	Cost/Fee:	LOE:
08/01/2015 To 07/31/2019		0
This Action:		1,136
Total:		1,136

Work Plan / Cost Estimate Approvals

Contractor WP Dated:	Cost/Fee	LOE:
Cumulative Approved:	Cost/Fee	LOE:

Work Assignment Manager Name: John McKernan (Signature) (Date)	Branch/Mail Code: Phone Number: 513-569-7415 FAX Number:
Project Officer Name: Nancy Parrotta (Signature) (Date)	Branch/Mail Code: Phone Number: 202-564-5260 FAX Number:
Other Agency Official Name: (Signature) (Date)	Branch/Mail Code: Phone Number: FAX Number:
Contracting Official Name: Donna Reinhart (Signature) (Date)	Branch/Mail Code: Phone Number: 513-487-2114 FAX Number:

PERFORMANCE WORK STATEMENT
Contract # EP-C-15-012
Work Assignment: WA-03-25

Work Assignment Contract Officer Representative (WACOR):

Name:	**John McKernan**
Division:	**Land and Materials Management Division, National Risk Management Research Laboratory**
Office:	**Office of Research and Development (ORD)**
Phone:	**513-569-7415**
E-mail:	**mckernan.john@epa.gov**
Mail code:	**MS 489A**
Street Address:	**26 W. Martin Luther King Dr.**
City, State, Zip:	**Cincinnati, OH 45268**

LOE: 1366 hours

Engineering Support Assistance

A. PURPOSE:

The purpose of this work assignment (WA) is to establish an on-going contracting vehicle to satisfy EPA Office, Program, and Regional support needs related to surface water, ground water and related site issues that lead to safeguarding and securing our homeland security, as outlined in the requirements of the Water SSP, NIPP risk management framework, PPD-21, PPD-8, HSPD-9, and EO 13636.

To achieve this purpose, the contractor shall be expected to provide support for: review of site specific engineering reports and data; remedial designs; assessment of and development of recommended actions to solve remedial technology problems; conduct treatability studies; on-site evaluation of treatment technologies or site characteristics; evaluations of technical problems; analysis of treatability studies; technical reviews; engineering evaluations; "lessons learned" analyses,; protective equipment; and development/provision of photographic and non production scale video documentation, presentation materials, technical writing services and technical meetings/presentations, as related to work under this contract.

The intended audience for this project is OSWER, OW, and the 10 EPA Regions.

This project supports programmatic support needs related to our national all hazards homeland security responsibilities by providing extensive technical support on surface water, ground water and related site remediation issues to Environmental Protection Agency (EPA) Offices, Programs, and Regions.

Other partners and external offices or agencies which should be included in coordination, and

the nature of their involvement, are OSWER, OW, and the 10 EPA Regions.

This work assignment supports the mission of the Water Security Division (WSD) as described in the Water Security Strategy framework, which relates resources, activities, outputs, audience, short- and long- term outcomes to the WSD pillars of Prevention, Detection, Response, and Recovery. Additionally, this work assignment contributes to the commitments made in EPA's *Strategic Plan: 2011 to 2015* and EPA's *Homeland Security Strategy (2004)*. Under EPA's *Strategic Plan*, reference is made to Goal 2 (Clean and Safe Water), Objective 2.1 (Protecting Human Health), Sub-objective 2.1.1 (Water Safe to Drink), and to the Cross-Goal on homeland security. Under EPA's *Homeland Security Strategy*, reference is made to Objective 1 (Critical Infrastructure Protection).

In support of these requirements, this contract supports the nation's drinking and wastewater infrastructure, collectively known as the Water Sector, in being informed, coordinated, and prepared to prevent, detect, respond to, and recover from terrorist attack and other intentional acts, natural disasters, and other hazards (referred to as the "all hazards' approach), which may also occur, including the needs and challenges posed by natural disasters, catastrophic events, adaptation and impacts of climate change, floods, earthquakes, pandemic illness, and any other events which impact the safety and availability of our water supply.

In pursuit of these efforts, the contractor may be tasked with preparing a correlation summary comparing the results under this work assignment to the components of the Water Security Strategy framework.

B. BACKGROUND

The National Risk Management Research Laboratory (NRMRL) provides extensive technical support on surface water, ground water and related site remediation issues to Environmental Protection Agency (EPA) Offices, Programs, and Regions. NRMRL water and site remediation technical support is a high priority activity and is the prime focus of this statement of work. The goal of NRMRL engineering technical support is to provide high quality, practical technical support to its technical support clients within short time frames. The purpose of this work assignment (WA) is to establish an on-going contracting vehicle to satisfy EPA Office, Program, and Regional support needs related to surface water, ground water and related site issues that lead to safeguarding and securing our homeland security, as outlined in the requirements of the Water SSP, NIPP risk management framework, PPD-21, PPD-8, HSPD-9, and EO 13636.

Specific contract support areas being requested through this WA include:

1) Critical infrastructure protection (CIKR);
2) National response and recovery;

3) Agency communication, information, and program management support efforts; and
4) Additional, unforeseen related issues that may be critical to the Agency.

Due to the often quick turnaround required, the contractor must have the ability to assign reviewers and technical experts quickly, and be able to complete administrative paperwork within a 21-30 day working time frame.

C. QA REQUIREMENTS:

Subtask 3, Task 1 involves the collection and use of environmental data. This is a continuation of work under WA 01-25 and the approved QAPP shall be utilized. This may be primary data generated as a product of characterization, treatability, or modeling research conducted under the subtask, or secondary data obtained from literature or other sources which is used to support conclusions from research conducted under the subtask. Other subtasks in Task 1 (1 and 3) in this WA require the review or use of secondary data. The approved QAPP from WA 01-25 will be utilized.

D. DETAILED TASK DESCRIPTION

Specific objectives for this work assignment are:

1) To provide NRMRL with technical support for evaluating and assessing treatment and remediation technologies for surface and ground water (and effected media) for the remediation of contaminated sites.

2) To provide fast turnaround technical reviews, documents and reports for site assessment/investigation and other written materials to provide EPA Office, Program and Regional clients.

3) Conduct research, development and evaluation of physical/chemical/biological processes to advance the state-of-the-art on contaminated surface water, ground water, and effected media to reduce risks to public health and the environment to acceptable levels.

The types of activities that the contractor shall provide support for are: review of site specific engineering reports and data; remedial designs; assessment of and development of recommended actions to solve remedial technology problems; conduct treatability studies; on-site evaluation of treatment technologies or site characteristics; evaluations of technical problems; analysis of treatability studies; technical reviews; engineering evaluations; "lessons learned" analyses,; protective equipment; and development/provision of photographic and non-production scale video documentation, presentation materials, technical writing services and technical meetings/presentations, as related to work under this contract. It is estimated

between 4 and 8 projects that fit in the subtasks below to be performed with the current LOE projected for this WA.

This work assignment consists of two tasks and four subtasks. The contractor will be notified electronically by the WACOR when technical support is required through the issuance of written technical direction. This written technical direction will be used to initiate the 4-8 projects estimated for this WA (i.e., the timing, and order of when to start the projects), and these 4-8 projects will all fit into one of subtasks in Task 1.

Each written technical direction will be formatted in a manner similar to the example form shown in Appendix A. In this written direction, the WACOR will provide the contractor with the schedule and any other particular details necessary to conduct selected Subtasks.

Under this WA, individual written Technical Direction (TD) shall be issued by the WACOR which will be electronically sent to the contractor's Project Manager as defined in the TD, with copies going to the EPA CO and Contract Level-Contract Officer Representative (CL-COR). The WACOR shall be responsible for approving Subtasks and shall notify the contractor's Project Manager, CL-COR, and CO, electronically. Work on Subtasks shall not begin until written technical direction is received and approved. Upon approval, (with copies to the CO and CL-COR), the contractor may continue working to the limits established (i.e., amount of LOE) under the work plan.

Exclusive Data Rights – Any and all data created, generated, or information construed due to the generation of data by parties paid under this WA are property of the U.S. EPA. Data or information created under this WA may not be used by parties other than the U.S. EPA without permission from the WACOR.

Citations or References - In work products (documents, reports, etc.) generated, the citation/referenced materials list must be available to the public, either freely or through purchase. When requested by EPA, the contractor must be prepared to compile and deliver cited/referenced materials upon delivery of work products. Cost of obtaining and aggregating these references will be at the EPA's expense. When copies of all references are needed, it will be indicated to the contractor before the work product is completed.

Peer-review - Contractor must be able to assemble and oversee an external peer-review process. Appropriate EPA forms for review will be supplied when this need arises. Usually external peer-review would consist of 1 EPA reviewer (not related to the work product) and 2 external reviewers, all without a COI. For cost estimating purposes, two (2) external peer-reviews for work products under Task 1, subtask 1 and 6 will be required.

Task 0. Preparation of the Work Plan

The contractor shall submit a work plan for the work assignment in accordance with the contract requirements.

The contractor shall provide a copy of the technical and financial monthly report to the EPA CL-COR and WACOR as is required by the contract. Reports shall separately list the activities and status under each TD.

In each monthly progress report, the contractor shall, at the introduction to the discussion of this WA, discuss actual progress toward achieving the purpose of this work assignment, including problems encountered, issues that may need to be resolved, and anticipated timing for completing the goals of the WA. The contractor shall provide an overview of contract projects, striving to implement efficiencies in performance when complimentary requirements are issued. The contractor shall assure that duplication of effort relative to other ongoing WA under this contract is not occurring.

Deliverables: Work plan, monthly reports and PQAPP.

Task 1. Work Assignment Deliverables

The contractor shall provide the following services if requested by the WACOR in a written TD. If the contractor is not familiar with NRMRL technical support work, each of these subtasks is described in detail in Appendix B of this PWS.

The subtasks are:

Subtask 1: Technical Review of Documents

Subtask 2: Field Visits for Site Evaluation

Subtask 3: Assessment of Remediation Options

Subtask 4: Modeling

Each of these subtasks specifies the objective, technical approach and deliverables for the respective activity.

The contractor shall provide the WACOR with both hard copy and computerized/ electronic copy of all technical reviews conducted under the following subtasks. The WACOR will provide the contractor with a standard format for all these reviews which shall be adhered to in all

Subtask 1 products.

Deliverables: Reports, summaries, or publications as described in the individual written TDs.

E. SCHEDULE/DELIVERABLES TABLE

GENERAL PRODUCT AND DELIVERABLE TIME LINES

Subtask	Name/Number	Due Dates/Time Lines
1	Technical Review of Documents (1-2)	Draft due between 2 weeks to 2 months after Work Plan approval, depending on complexity of review.
		Final due 2 weeks after draft review comments returned to contractor.
2	Field Visits for Site Evaluation (1-2)	Field visits will be conducted upon technical direction.
		Draft field visit report due 2 weeks after travel.
		Final due 2 weeks after draft review comments returned to contractor.
3	Assessment of Remediation Options (1-2)	
		Will be conducted upon technical direction. Draft due between 2 weeks to 2 months after Work Plan approval, depending on complexity of review.
		Final due 2 weeks after draft review comments returned to contractor.
4	Modeling (1-2)	Modeling will be conducted upon technical direction.
		Draft modeling reports due 2 weeks after completion, however may depend on complexity of study.
		Final due 2 weeks after draft review comments returned to contractor.

F. GREEN MEETINGS AND CONFERENCES

The contractor shall follow the provision of EPA prescription 1523.703-1, *Acquisition of environmentally preferable meeting and conference services (May 2007),* for the use of off-site commercial facilities for an EPA event, whether the event is a meeting, conference, training session, or other purpose. Environmental preferability is defined at FAR 2.101, and shall be

used when soliciting quotes or offers for meeting/conference services on behalf of the Agency.

G. CONFERENCES AND WORKSHOPS

The tasks under this work assignment may require the acquisition of "off-site" facilities for conferences and meetings as defined in the IPN 12-05. The events associated with this work assignment may be covered by EPA Order 1900.3 and could require EPA Form 5170. A determination of the number of participants and amount of EPA funds spent for any off-site conference or meeting would have to be determined, and the requirement for a 5170 form will be determined at that time.

The contractor shall immediately alert the WACOR to any anticipated event under the work assignment which may result in incurring an estimated $20,000 or more cost, funded by EPA, specific to that event, meeting, training, etc. Those costs would include travel of both prime and consultant personnel, planning and facilitation costs, AV and rental of venue costs, etc. The EPA WACOR will then prepare for approval the internal paperwork for the event and will advise the contractor when appropriate signatures have been obtained. At that point, effort can proceed for the event. If the event is being sponsored by another EPA organization, the organization providing the planning is responsible for the approval.

Any event which meets the definition of a "conference," with total net expenditures greater than $20,000, is required to submit EPA Electronic Form 5170 and Form 5170-A (with cost estimates/actuals). In the case the workflow system is down and CORs require emergency approval, they can submit EPA Form 5170 (PDF) (2pp, 93K) (with cost estimates) to conference@epa.gov.

H. SOFTWARE APPLICATION AND ACCESSIBILITY (SECTION 508 REHABILITATION ACT AND AMENDMENTS)

Software Application files, if delivered to the Government, shall conform to the requirements relating to accessibility as detailed to the 1998 amendments to the Rehabilitation Act, particularly, but not limited to, § 1194.21 Software applications and operating systems and § 1194.22 Web-based intranet and internet information and applications. See: http://www.section508.gov/

Preferred text format:	MS Word, 8.0 or higher (Office 2007 or higher)
Preferred presentation format:	Power Point, Office 2007 or higher
Preferred graphics format:	Each graphic is an individual GIF file
Preferred portable format:	Adobe Acrobat, version 6.0

Delivered products will be required to comply with section 508 requirements.

I. QUALITY ASSURANCE SURVEILLANCE PLAN for WSD's Mission Support

Quality Assurance Surveillance Plan

The requirements contained in this WA are considered performance-based, focusing on the Agency's desired results and outcomes. The contractor shall be responsible for determining the most effective means by which these requirements will be fulfilled. In order to fulfill the requirements, the contractor shall design innovative processes and systems that can deliver the required services in a manner that will best meet the Agency's performance objectives. This performance-based requirement represents a challenge to the contractor to develop and apply innovative and efficient approaches for achieving results and meeting or exceeding the performance objectives, measures, and standards described in Attachment 4 of the contract. The Contractor's performance will be reflected in the positive or negative evaluation offered by the Agency in the Contractor Performance Evaluation (CPE) which is evaluated annually (per the "Contractor Performance Evaluation" clause in the contract). The WACOR shall submit a complete annual review of the areas outlined in the Quality Assurance Surveillance Plan (QASP), included in the contract, which will then be utilized by the CLCOR in preparing the overall evaluations submitted annually in response to the Contractor Performance Evaluation requirements in the contract.

J. APPENDICES:

Appendix A	**Technical Direction Request Form (TD)**
Appendix B	**PWS Subtasks and Descriptions**
Attachment 1	**Standard Format/Checklist for NRMRL Site-Specific Technical Reviews**

APPENDIX A

Technical Direction Form

CONTRACTOR: _____ CONTRACT #_____

TD #:_____ Date: _____

1.) Site/Project

2.) Date:

3.) Region:

4.) Description of Subtask to be Performed:

Document or Information Provided by WACOR:

Deliverables and Due Dates:

5.) Estimated Hours to Perform:

6.) Completion Date of SubTask:

7.) Source of Funds: ETSC Type of Funds: SF_____RCRA_____OTHER_____

8.) DCN for Funds:

9.) Special Instructions:

For evaluation of potential conflict of interest, the PRPsat this site are:

The materials being reviewed were prepared by:

10.) Attachments:

11.) Documents Sent:

12) Additional Information Attached??

Copies to: CL-COR, CO

APPENDIX B

SUBTASK 1. TECHNICAL REVIEWS OF DOCUMENTS

OBJECTIVE:

1) The Contractor shall perform an expert technical review of a document(s) prepared by other organizations pursuant to the preparation for or execution of remediation of hazardous waste sites.

The purpose of such reviews is to objectively identify and document the adequacy and completeness of the scientific and engineering aspects of the selection and implementation of remediation technologies and of other remediation activities. Particular attention shall be given to identifying major errors or omissions (related to the engineering aspects of the document) that, if not addressed, could significantly jeopardize the cost or effectiveness of the remediation effort. Normally, reviews are limited in scope to major issues resulting from expert review of the document, and cross-checking every detail presented in the document being reviewed is not required unless specifically requested as part of the site-specific task assignment.

2) The Contractor shall perform an expert technical review of non-site-specific documents with particular attention to errors or omissions of engineering aspects of the document.

Definition of Expert Reviews

The Contractor shall maintain a suitable level of remediation engineering expertise such that expert level reviews of site-specific documents can be conducted. Some of the elements that the contractor shall have expertise in include: engineering, sampling and analyses, and QA/QC developments in the field of remediation. Such expert knowledge shall include the advantages, limitations, performance, cost, data needs and implementation requirements of conventional, innovative and emerging remediation technologies; currently employed techniques (and policies) pertaining to specific types of sites; and currently employed sampling, analytical and QA/QC techniques for both field and laboratory applications. Reviews shall normally be conducted such that currently available data and information pertaining to the technologies or site types that are the subject of the site-specific document being reviewed shall be reflected in the review comments as appropriate, and shall be referenced as appropriate. For example, a review of a treatability study for soils washing shall be performed in accordance with the standard format/checklist noted below, and shall, as appropriate to substantiate key review conclusions, include references to key documents. Such documents shall, for example, describe applicable protocols for treatability testing, sampling, analysis and QA/QC, and the expected performance of the technology under the site-specific conditions being reviewed based upon the results of similar treatability studies at other sites.

Types of Documents to be Reviewed:

Documents to be reviewed shall be both site-specific and non site-specific. Site-specific documents shall pertain to Removal and Remedial Actions under the Comprehensive Environmental Response, Compensation & Liability Act (CERCLA), related actions under the Resource Conservation & Recovery Act (RCRA), or other similar actions under other cleanup authorities, such as State, Department of Energy (DOE) or Department of Defense (DOD), and shall include:

1) **Site investigation** materials such as Remedial Investigation Work Plans and Remedial Investigation Reports (draft or final), or similar documents, including all associated Sampling and Analytical (S&A) planning materials, Quality Assurance/Quality Control (QA/QC) planning materials, and completed samples and analyses with associated QA/QC

materials.

2) **Feasibility Study** materials including Feasibility Study Work Plans, Feasibility Study Reports and Cost Estimates, or similar documents, including all associated S&A planning materials, QA/QC planning materials and completed samples and analyses with associated QA/QC materials. This category includes all types of documents associated with remedy selection, including ROD's and similar documents.
3) **Treatability Study** materials, including Treatability Study Work Plans and Treatability Study Reports, or similar documents, and including all associated S&A planning materials, QA/QC planning materials and completed samples and analyses with associated QA/QC materials.
4) **Remedial Design** materials, including Site Investigation Work Plans and Reports, Conceptual Design Reports, and similar documents, including all associated S&A planning materials, QA/QC planning materials and completed samples and analyses with associated QA/QC materials. This category includes all types of site-specific plans for implementing cleanup activities.
5) **Remedial Action** materials, including performance data, cost data and similar information appropriate to implementation of a remediation activity. This category includes implementation of any remediation, Removal Action or other execution of a remedy for a specific site. Special Reviews may also be requested by EPA on special documents or groups of documents. The nature of such Special Reviews will be identified in the Technical Directive (see paragraph below on Information Provided by EPA).

TECHNICAL APPROACH:

Reviews shall, where appropriate, be conducted in accordance with the Standard Format/Checklist for NRMRL site-specific reviews (see Attachment 1 below). The Format is intended to be used as a general guide by an expert reviewer to assure that certain basic information is included in the review, but is not intended to be all-inclusive. Should some aspect of the site-specific document require technically expert comment on an item that is not included in the Standard Format, but was requested in the site-specific Technical Directive, the reviewer shall provide the comments as appropriate. Where the Standard Format is not to be used, or is to be modified, specific direction will be provided by EPA in the site-specific work order to the Contractor, as noted below in the paragraph on Information Provided by EPA.

Note that Sections 1, 2 & 4 of the Standard Format are common to all types of reviews. Section 3 is presented in five different versions to reflect the differences among the basic types of reviews listed above. The contractor may be required to visit a site under certain circumstances to obtain information necessary to a review. Should a site visit be required, the contractor shall follow all applicable site visit procedures as noted in the Field Visits for Site Evaluation Subtask of the Technical Support Work Order.

DELIVERABLES:

Deliverables shall include an Engineering Technical Review and Transmittal Letter in hard copy and electronic formats. 1-2 Engineering Technical Review, Transmittal Letter, or memoranda may be developed. Deliverables may include visits to Regional, other EPA or Responsible Party offices, and presentation of oral reports or briefings that discuss the review results.

WA SPECIFIC INFORMATION PROVIDED BY EPA/WACOR:

EPA will provide the following specific information in the site-specific work order assignment (in addition to the items specifically listed on the site-specific assignment form):

- Which basic type of review (and review format) is being required (Site Investigation, Feasibility Study, Treatability Study, Remedial Design, Remedial Action), or if a Special Review is required, what are its specific characteristics and what format should be used for the review;

- What constraints or limitations are being placed on the review (e.g., particular focus of a review), what is the relative emphasis among the various elements in the Standard Format for that particular type of document review, and any other modifications to the Standard Format for that type of review?

- What documents are being provided?

- What requirements are being made, if any, for a site visit; what is the purpose of the site visit; and all associated information as identified in the "Information Provided by EPA/TOM" section of the "Field Visits for Site Evaluation"?

SUBTASK 2

FIELD VISITS FOR SITE EVALUATION

OBJECTIVE:

1) To obtain a more comprehensive understanding of the appearance, layout, environs, topography, hydrology, history, use, and other background factors of a site by inspecting, photographing, and discussing a contaminated site by making a field visit to the site.

2) To visit a contaminated site, recommend sampling locations and possibly observe sample collection by others.

3) To observe and provide technical records, comments, or recommendations regarding sampling or treatment activities being conducted by others on a contaminated site.

TECHNICAL APPROACH:

The contractor shall only travel to and enter contaminated sites after receiving EPA approval for visiting a particular site. All personnel entering the site must have received and be current with health and safety training required by EPA and OSHA. The contractor shall provide and use all appropriate safety equipment in accordance with the site health and safety plan. The contractor shall be accompanied by the WACOR or his / her representative who is a trained EPA employee and certified contracting officer's representative (COR).

The contractor shall provide all equipment necessary to accomplish the specific objective (a., b., or c.). Contractor shall maintain records including a notebook documenting all significant on site activities and observations. When serving as a technical observer (objective 1. or 2.) the contractor shall notify the WACOR immediately (via telephone or fax) of recommended changes or critical problems observed and shall follow-up with a written report. The contractor has no authority to direct changes in work conducted by others on sites being visited. Most activities shall require a site visit of only one or two days. However, if tasked to provide a technical observer for activities conducted by others such as on site treatability studies or remedial action start up, the contractor may be required to be on site for one to three weeks.

DELIVERABLES:

Contractor deliverables will be specified in the TD and may include memoranda, brief letter reports, summary reports of information obtained from site visits or meetings including photographs or video tapes, recommendations supported by written reports, field notebooks, and other similar brief documentation of findings and recommendations. 1-2 memoranda, brief letter reports, summary reports or other similar brief documentation may be developed. Any photos, recordings, or other written or recordable material collected at the site should be included either in the site

report, or as appendices or property to be submitted to the WACOR.

WA-SPECIFIC INFORMATION:

The WA will always provide the site name and location, objective of site visit, site access arrangements, and deliverables expected with due dates. Prior to the site visit EPA will also provide a summary of existing site conditions and hazards and information on site health and safety requirements along with other site background information useful in accomplishing the stated objective.

SUBTASK 3

ASSESSMENT OF REMEDIATION OPTIONS

OBJECTIVE:

The contractor shall evaluate the applicability of treatment technologies, containment and other remediation options for the site(s) based on site data and other information supplied by EPA, or obtained by the contractor through field assessments, the open literature or other sources. The contractor shall produce a product which describes the potential applicability of each of these technologies to the site(s). If requested, the contractor shall also recommend additional evaluations that need to be conducted to better determine the applicability of these options.

TECHNICAL APPROACH:

1) Evaluation/Collection of Available Data. The contractor shall review the material supplied by EPA which describes the site characteristics, clean-up goals, ARARs and other information (e.g. literature evaluations) pertinent to technology evaluation. The contractor shall conduct any required field evaluations according to the procedures specified in Subtask 2 of this SOW. The purpose of this review shall be to identify all information pertinent to evaluation of the remediation options.

2) Remediation Option Evaluation. The contractor shall determine based on the data available, published EPA remedial technology evaluation and selection guidance, and engineering judgement, the potential applicability of each of the remediation options specified by EPA. If the contractor believes that there are other options that should be evaluated, the contractor shall make this recommendation to EPA. EPA will evaluate such recommendations and, if appropriate, revise the task assignment. The contractor shall assess the pros and cons of applying each option to the site; including ability to reach clean-up goals; cost; implementation; reduction of toxicity, mobility, and volume; long- and short-term effectiveness; risk of application and any other factor identified by the WACOR. The contractor shall identify site characteristics and/or other site factors which make it appropriate to consider different technologies for different parts of the site and shall conduct the remedial option evaluation in a manner that clearly identifies how these factors influence the applicability of various options. The contractor shall also consider combinations of remediation options if these provide advantages over the use of individual options.

DELIVERABLES:

The contractor shall produce a document describing the options assessment. 1-2 options assessments may be developed. This document shall describe the rationale used in conducting the assessment and shall present a systematic evaluation of the applicability of the remediation options. If specified by EPA, the contractor shall make recommendations as to additional data collection and evaluations, or treatability studies that should be conducted to further clarify the applicability of remediation options to the site. If specified by EPA, the contractor shall make presentations in meetings on the results of this study according to deadlines specified by EPA.

WA-SPECIFIC INFORMATION PROVIDED BY EPA:

As part of each WA, the EPA will specify to the contractor what the sources of information are to be used in this evaluation. EPA will specify the technologies and other remediation options to be evaluated in the assessment, the deliverables to be provided by the contractor and deadlines to be met in completing the subtask. EPA will specify whether or not the contractor shall make recommendations on what additional studies/evaluations are needed to evaluate options. The site-specific task WA, will also specify the level of effort to be spent by the contractor on this subtask as a whole and, if necessary, on individual parts of this subtask.

SUBTASK 4

MODELING

OBJECTIVE:

The objective of this subtask shall be to utilize existing models or create new models to evaluate physical/chemical/biological/ mechanical/ cost phenomena or uncertainties/issues associated with site remediation or to facilitate comprehension of large amounts of site-specific data and interactions that occur as contaminants have or may spread through the environment.

TECHNICAL APPROACH:

The contractor shall carry out the following activities:

1) Evaluate the problem and recommend the appropriate existing model(s), model adjustments, or development of new models, if appropriate. The WACOR will evaluate these recommendations and indicate to the contractor which models shall be acceptable to utilize and whether adjustments shall be made or new models created.

2) Evaluate available data for use in the model and recommend what additional data is needed to effectively use the model. The WACOR will evaluate these recommendations and, if appropriate, amend the task assignment to include collection and/or utilization of additional data by the contractor.

3) Use an existing model, the modified model or new model to perform the modeling of the physical/chemical/biological/ mechanical/cost phenomena or uncertainties/issues, and produce modeled results in the form of tables, charts, figures within a report. The report shall also evaluate the uncertainties associated with the modeled results, describe model validation efforts and, if requested, make recommendations concerning the data required to improve upon the modeled results. A quality assurance project plan (QAPP) may be required for this activity if data are used or generated in the modeling effort. Requirements for a contractor-prepared QAPP will be provided if data are used or generated in the modeling effort.

DELIVERABLES

1-2 models may be developed. Deliverables shall include the graphs, tables, figures and other forms of presentation of the modeled results. If requested, these shall be in the form of a written report and/or briefing(s) to the WACOR. If requested, this report shall include recommendations on data needed to improve modeled results. If an existing model is modified or a new model developed, the contractor shall provide copies of the model to the WACOR. The WACOR will review all deliverables and these shall be finalized per the WACOR's comments.

WA-SPECIFIC INFORMATION

In each TD the WACOR will specify the technical problems(s) to be evaluated and, if appropriate, the model(s) to be used in the evaluation. If known, the WACOR will specify the accuracy expected of the modeled evaluation; otherwise; the contractor shall make a recommendation and request the WACOR's concurrence. The WACOR will specify the time schedule and deliverables to be provided, including whether the contractor shall make formal recommendations about improvements that shall be made to the modeling process. The WACOR will specify the requirement for QA documentation necessary to implement research activity for this or other subtasks.

ATTACHMENT 1

STANDARD FORMAT/CHECKLIST FOR
NRMRL SITE-SPECIFIC TECHNICAL REVIEWS

1.0 TRANSMITTAL LETTER

The Transmittal letter will serve as a record of transmittal of the Contractor's completed review report (hereafter called the "Review") of the site-specific document (hereafter called the "Document") from the Contractor to the EPA Task Order /Work Order Manager. The letter shall also address any significant side issues discovered by the reviewer which are not within the immediate scope of the work assignment, or specific issues that have not been discussed within the review by the reviewer. The reasons for these actions shall be stated briefly.

2.0 INTRODUCTION AND SUMMARY

The introduction and summary shall be a "stand alone" section after the cover page. This section shall summarize the Document, the WO and the Review, in that order, and shall be suitable for potential inclusion in a database covering NRMRL site-specific activities. The length shall be one to three paragraphs and principal conclusions and other key points shall be in "bullet" form.

The contractor shall perform the following:

- Identify the type of Document (from among the types listed above, e.g., treatability study work plan or remedial investigation draft report). Provide a brief overview/background of the Document. Identify site name, location, pertinent site characteristics, key contaminants, cleanup goals, volume of contamination and any other key information relevant to the review.

- Clearly identify the purpose and scope of the review as presented in the site-specific TD.

- Identify any tasks from the TD that are specifically addressed in the Review.

- Briefly list conclusions and recommendations from the Review. Be specific and direct with the intent to stand by your comments.

3.0 ANALYSIS OF TECHNICAL ISSUES

This section shall present a comprehensive and technically expert review and analysis of the technical issues that have prompted the request for expert assistance. These discussions shall provide explicit conclusions concerning each technical issue being addressed. Five specific types of analyses and considerations to be addressed by the contractor are listed below:

FOR REMEDIAL INVESTIGATION MATERIALS:

3.1.1 Technology Applicability

- What are the contaminants of concern and preliminary cleanup goals for this site? For other similar sites?
- What technologies are potentially applicable to the site?
- What technologies have been used for similar sites elsewhere?

3.1.2 Analysis of Technology-Related Data Needs

- What are the data needs for each of these potentially applicable technologies?
- Is (will) adequate data (be) available to make preliminary judgement for technology applicability?
- Are the correct parameters being measured?
- Will the number and location of samples be the minimum to be sufficiently representative of the site variability regarding contaminant types, contaminant concentrations and matrix types?
- Are samples being taken to identify potential implementation concerns for the technologies being considered? Should such samples be taken now?
- Are adequate types and locations of samples being taken from which to make reasonably accurate estimates of volumes of various types of contaminated matrices?
- For Remedial Investigation (RI) Work Plans: would a two phased approach involving first screening for extent and type of contamination, and a later, more complete investigation, be appropriate? If it is being planned, is it being planned adequately? What weaknesses, if any, are present in the plan?

FOR FEASIBILITY STUDY MATERIALS:

3.2.1 Appropriateness of Technologies

- Was adequate site characterization information included to enable you to make judgements on the suitability of candidate technologies?
- What information is missing and what is the implication of that missing information?
- If a remedy selection decision must be made without getting the additional information, will this have major or minor effect on the uncertainties of the decision? If a major effect, could the information be obtained Post-Record of Decision (ROD)? Could a bi-headed ROD be used to

"back up" the decision with a known approach?

- Were all potentially appropriate technologies included in the initial screening?
- Were treatment trains or other combinations of technologies used appropriately?
- Were innovative remediation technologies given appropriate opportunity for evaluation?
- Were any appropriate technologies omitted? What technology and why appropriate?

3.2.2 Evaluation of Technologies

Was each technology treated accurately regarding expected performance and cost for the site-specific situation?

Are the cleanup goals clearly identified for each matrix to be remediated?

Are these goals consistent with other sites of similar type?

If the cleanup goals are significantly different from other sites of similar type, does this have significant technology selection and cost implications? (Caution: the purpose here is not to comment on the appropriateness of the goals for the site, only to identify comparisons between the subject site and similar sites).

Was correct data used to draw conclusions? Was a treatability study used for data acquisition purposes? If not, was the data that was used accurate and of sufficient quality for remedy selection?

If a remedy selection decision must be made without getting the additional data, will this have major or minor effect on the uncertainties of the decision? If a major effect, could the information be obtained post-ROD? Could a bi-headed ROD be used to "back up" the decision with a known approach?

If a treatability study was performed, refer to the Standard Format for Treatability Study Materials, below, for the review pattern.

Is the conclusion of the feasibility study adequately supported by the data and information presented? If not, why not?

FOR TREATABILITY STUDY MATERIALS:

3.3.1 Assessment of Technology Applicability

- Discuss general applicability of the technology to the site, including potential advantages and limitations.
- Do any site conditions constitute a limitation for applying the technology?

- Is the technology being planned for appropriate application, such as in a treatment train? If not, identify weaknesses of planned application and consequences.

3.3.2 Site Sample Requirements

- Is adequate site characterization data available? If not, identify missing data and consequences of not having the information. Comment on the representativeness of the site (solids or liquids) sample(s) used during the treatability study. Are variability of contaminant concentration, contaminant type and matrix adequately represented by the sample(s)? Are samples "Worst Case" or "Average?" Was the choice appropriate?

- Were samples collected, containerized, transported and stored in accordance with an appropriate approach considering the site-specific conditions?

3.3.3 Treatability Study Test Design

- Goal or reason for the test. Are goals clearly stated? If not, what goals are assumed to evaluate the study? Will the tests be able to how whether the goals are achievable? Are modifications required to enable the tests to achieve the goals and purpose?

- Identify the parameters to be measured. Are all major parameters covered in the test design? If so, say so and back your conclusions. If not, indicate missing parameters and discuss why measurements are required.

- Is the Sampling and Analytical Plan appropriate and based on acceptable protocols?

- Are standard testing protocols specified? Is the correct protocol specified? If a non standard protocol is specified, does the document adequately justify its use? Are specified QA/QC levels adequate to meet the study goals? Provide information to back your conclusions. (A detailed QA/QC review is not to be done. Such a review, if required, will be conducted by EPA or an EPA QA/QC contractor.)

3.3.4 Conclusions of Treatability Study Test

- Analysis of test conclusions (including vendor tests)

- Express agreement or disagreement with (vendor's) conclusions and present reasons for your position.

- Cite any existing appropriate public domain data and compare it to test data. Highlight discrepancies and discuss reasons for discrepancies.

- Avoid general critique of an individual vendor's process. If a problem is characteristic of the technology generalize your critique to the overall type of technology. However, if a specific technical feature of the vendor's process causes an identifiable effect, that is not necessarily characteristic of the technology in general, that feature shall be identified if necessary to draw a conclusion.

- Need for further testing to select technology. List further testing requirements and justify the recommendation. If the additional tests are not conducted, and it is necessary to make a final technology selection based upon the data at hand, what are the uncertainties or risks to such a decision. Minor? Major?

FOR REMEDIAL DESIGN MATERIALS:

3.1 Evaluation of Data Needs for Technology Implementation

- Will sufficient data, regarding representativeness and variability be available to adequately characterize the site for purposes of implementation? If not, what additional information is needed and why?

- If the Remedial Design involves obtaining additional field data, refer to the Standard Format for Remedial Investigation Reviews, above.

- If the Remedial Design involves a treatability study (including a Trial Burn or other proof-of-performance test), refer to the Standard Format for Treatability Study Reviews, above.

- What special recommendations do you have for a remedy design treatability study for this site?

3.2 Design Reviews

- What major errors or omissions are present that, if not addressed, would have serious consequences on the implementation of the remediation?

- What other errors or omissions are present that have come to your attention during your review that shall be brought to the attention of the designers?

FOR REMEDIAL ACTION MATERIALS:

Review of a remedial action, such as an operations review to uncover operational problems, would normally involve a document review stage and a site-visit stage. The document review stage may involve the review of previously-conducted site investigations, treatability studies and/or design materials. In each case, the reviewer shall refer to the Standard Format as appropriate and use judgement as to which questions are appropriate.

The goal of a remedial action document review shall be to identify documented site characteristics or treatability information that could be particularly relevant to the operating problems being experienced, and to provide adequate background information for personnel planning a field visit.

4.0 REFERENCES

List guidance documents, technical bulletins, reports, journal articles, etc.

EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 03-26

☐ Other ☐ Amendment Number:

Contract Number	Contract Period	Title of Work Assignment/SF Site Name
EP-C-15-012	08/01/2015 To 07/31/2019 Base Option Period Number 3	Fish Contamination Surveillanc

Contractor: CSRA LLC

Specify Section and paragraph of Contract SOW: 2.8, 2.15, 2.16, 2.17, 3.14, 3.1.13, 3.1.19

Purpose:
- [X] Work Assignment
- [ ] Work Assignment Amendment
- [ ] Work Plan Approval
- [ ] Work Assignment Close-Out
- [ ] Incremental Funding

Period of Performance: From 08/01/2018 To 07/31/2019

Comments:
In accordance with clause B.1 of the contract, immediate start is hereby approved for this work assignment beginning on August 1, 2018. If the work plan is not approved within 35 calendar days after receipt of the work plan, the contractor shall stop work.

☐ Superfund — Accounting and Appropriations Data — [X] Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*): ☐

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

	Cost/Fee	LOE
Contract Period: 08/01/2015 To 07/31/2019		0
This Action:		3,450
Total:		3,450

Work Plan / Cost Estimate Approvals

	Cost/Fee	LOE
Contractor WP Dated:		
Cumulative Approved:		

Work Assignment Manager Name: Leanne Stahl	(Signature)	(Date)	Branch/Mail Code: Phone Number: 202-566-0404 FAX Number:
Project Officer Name: Nancy Parrotta	(Signature)	(Date)	Branch/Mail Code: Phone Number: 202-564-5260 FAX Number:
Other Agency Official Name	(Signature)	(Date)	Branch/Mail Code: Phone Number: FAX Number:
Contracting Official Name: Donna Reinhart	(Signature)	(Date)	Branch/Mail Code: Phone Number: 513-487-2114 FAX Number:

PERFORMANCE WORK STATEMENT
CSRA EP-C-15-012
Work Assignment No. 03-26
Period of Performance: 8/1/18-7/31/19

I. ADMINISTRATIVE:

A. Title: Support for Fish Contamination Surveillance

B. Work Assignment Manager:
Leanne Stahl
Office of Science and Technology (OST)
1200 Pennsylvania Ave. NW (MC 4305T)
Washington, DC 20460
202-566-0404
stahl.leanne@epa.gov

Alternate Work Assignment Manager:
John Healey
Office of Science and Technology (OST)
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Washington, DC 20460
202-566-0176
healey.john@epa.gov

C. Quality Assurance:

Some carryover activities under Task 1 (Support for Surveillance Monitoring of Contaminants of Concern in U.S. Waters) of this performance work statement (PWS) require quality assurance (QA). Collection, use, and analysis of data for 2015 Great Lakes Human Health Fish Fillet Tissue Study (GLHHFFTS) activities, such as revision of statistical analysis input files for dioxins and furans and QA review of contaminants of emerging concern (CEC) data, will be identical to the procedures described in two existing Project-Specific Quality Assurance Project Plans (PQAPPs) completed under Task 1 of WA 01-26 and Task 1 of WA 02-26, respectively (EPA Contract No. EP-C-15-012), consistent with the Agency's QA requirements, appending the Contract Quality Assurance Project Plan (QAPP). The titles of these existing PQAPPs are as follows:

- *Quality Assurance Project Plan for Sample Preparation and Analysis for the 2015 National Coastal Condition Assessment Great Lakes Human Health Fish Fillet Tissue Study, Revision 4, April 4, 2017.* (completed and approved under Task 1 of WA 01-26, EP-C-15-012)

- *Quality Assurance Project Plan for Comprehensive Halogenated Chemical Screening of Samples for the National Coastal Condition Assessment 2015 Great Lakes Human Health Fish Fillet Tissue Study, Revision 0, December 13, 2017.* (completed and approved under Task 1 of WA 02-26, EP-C-15-012)

The project-specific QA requirements for these Task 1 carryover activities must be addressed in the monthly progress reports as specified under Task 0 below.

Some new analytical activities to be conducted under Task 1 of the WA 03-26 PWS require QA. These activities include chemical analysis of the 2018-19 National Rivers and Streams Assessment Human Health Fish Tissue Study (2018-19 NRSA) fillet tissue samples for target

chemicals (e.g., mercury, PCBs, and PFCs) under sub-task 1.2 (Laboratory Services Support) and QA review of the target chemical analytical and quality control (QC) data under sub-task 1.3 (Data Review and Other QA Support). Consistent with the Agency's QA requirements, the contractor shall prepare a sample analysis PQAPP as described under Task 1, sub-task 1.2, for these new 2018-19 NRSA analytical activities. Work on the new Task 1 analytical activities cannot proceed until the contractor receives notification of sample analysis PQAPP approval from the Contract Level Contracting Officer Representative (CLCOR) via email. The QA requirements must be addressed in the work plan in response to the PQAPP development specifications described in Task 1, sub-task 1.2 of this PWS and in monthly progress reports as specified in Task 0 below.

In addition, some carryover activities under Task 3 (Support for Evaluation of Fish Tissue Sampling Methods for Contaminant Monitoring) of this PWS require QA. Collection, use, and analysis of data for 2018-19 NRSA activities, such as chemical analysis of the Fish Plug Evaluation Study fillet tissue samples for mercury and for selenium and percent moisture under sub-task 3.1 (Laboratory Services Support) and QA review of the mercury and selenium analytical and QC data under sub-task 3.2 (QA Support), will be identical to the procedures described in the PQAPP completed for Task 3 of WA 02-26 (EPA Contract No. EP-C-15-012), consistent with the Agency's QA requirements, appending the Contract QAPP. The title of this existing PQAPP is as follows: *Quality Assurance Project Plan for Analysis of Fish Fillet Samples for the Fish Plug Evaluation Study, Revision 1, June 2018*. The project-specific QA requirements for these Task 1 carryover activities must be addressed in the monthly progress reports as specified under Task 0 below.

D. Background:

The Office of Science and Technology (OST) within EPA's Office of Water conducts studies that identify and assess the levels of chemical threats to surface water quality and human health in U.S. waters using fish tissue as an indicator of water quality. In the Great Lakes, OST partners with EPA's Great Lakes National Program Office (GLNPO) to conduct these statistically based fish tissue studies. Since 1998, OST and GLNPO (for Great Lakes fish tissue studies only) have initiated the following fish tissue studies (in reverse chronological order):

- 2018-19 National Rivers and Streams Assessment Human Health Fish Tissue Study (2018-19 NRSA)
- 2015 National Coastal Condition Assessment (NCCA) Great Lakes Human Health Fish Fillet Tissue Study (2015 GLHHFFTS)
- 2013-14 National Rivers and Streams Assessment Human Health Fish Tissue Study (2013-14 NRSA)
- 2010 NCCA Great Lakes Human Health Fish Tissue Study (2010 GLHHFTS)
- 2008-2009 National Rivers and Streams Assessment Human Health Fish Tissue Study (2008-09 NRSA)
- 2006 Pilot Study of Pharmaceuticals and Personal Care Products (PPCPs) in Fish Tissue (PPCP Fish Pilot Study)
- 2000-2003 National Study of Chemical Residues in Lake Fish Tissue (National Lake Fish Tissue Study or NLFTS)

The 2018-19 NRSA Human Health Fish Tissue Study or 2018-19 NRSA is the third probability-based assessment of levels of contaminants of concern in fish from U.S. rivers. Since 2008, these fish contamination assessments in rivers have been conducted at 5-year intervals under EPA's National Rivers and Streams Assessment (i.e., 2008-09 NRSA and 2013-14 NRSA). The years in the study name indicate that fish sample collection takes place over a period of 2 years. The number of fish tissue sites vary for the three river assessments, depending on the resources available. EPA selected 477 river sites to collect fish composite samples for fillet analysis during the 2018-19 NRSA. Target chemicals for this assessment include, but may not be limited to, mercury, PCBs, and PFCs.

In 2014, EPA began planning for the second surveillance monitoring effort in the Great Lakes, which is designated as the 2015 Great Lakes Human Health Fish Fillet Tissue Study or 2015 GLHHFFTS. These Great Lakes surveillance monitoring efforts are scheduled at five-year intervals under EPA's National Coastal Condition Assessment. The 2015 GLHHFFTS provides the first opportunity for EPA to develop probability-based temporal trends data for contaminants of concern in Great Lakes fish by comparing data sets on the chemical concentrations in fillet tissue samples generated for the 2015 GLHHFFTS and the 2010 GLHHFTS. Fish samples that met the criteria for this study were collected at 152 nearshore sampling sites in the five Great Lakes primarily during the summer and fall of 2015. The last five fish samples were collected from sites in Lake Michigan during May 2016. Fillet tissue samples have been analyzed for the following contaminants: mercury, PCBs, perfluorinated compounds (PFCs), and dioxins/furans. Analysis of fillet samples for some additional CECs is ongoing. The tasks remaining for this study include completion of the fillet tissue analysis for CECs, quality assurance (QA) review of the remaining analytical data, and data reporting.

The 2013-14 NRSA Human Health Fish Tissue Study provides the first opportunity to develop probability-based temporal trends data for contaminants of concern in fish from U.S. rivers when compared to chemical data in fish tissue generated for the 2008-09 NRSA human health fish tissue study. Fish samples were collected from 353 river sites in the lower 48 states during the spring and summer months of 2013 and 2014. EPA analyzed fillet tissue samples from all 353 sites for mercury, from 349 sites for PFCs, and from a subset of 223 sites where fish tissue samples were previously collected during the 2008-09 NRSA for polychlorinated biphenyls (PCBs). The final task remaining for this study is data reporting.

The 2010 GLHHFTS involved the first probability-based surveillance monitoring for contaminants of concern in fillets of Great Lakes fish from 157 nearshore sites sampled in the five lakes during 2010. Fillet tissue samples were analyzed for mercury, PCBs, PBDEs, and PFCs. Results from this study will establish a statistically representative baseline for assessing threats to the quality and security of Great Lakes water resources. EPA will complete data reporting for this study in 2019.

The 2008-09 NRSA Human Health Fish Tissue Study was the first probability-based assessment of the levels of contaminants of concern in fish from U.S. rivers. It involved collection of fish from 542 river sites in the lower 48 states during 2008 and 2009. Fillet tissue samples were analyzed from all the sites for mercury, selenium, PCBs, PBDEs, and pesticides

and from only the 163 urban river sites for PFCs. Results from this study provide the first statistically representative national chemical baseline data for identifying threats to the quality and security of U.S. rivers. Data reporting was completed in 2017 for this study. Tasks for this study will focus on long-term data management, response to data requests, and preparation of final disposition and storage of project records.

EPA developed the PPCP Fish Pilot Study to assess the threats these contaminants of emerging concern may pose to surface water quality and human health. In 2006, fish samples were collected from one reference site in New Mexico and effluent-dominated streams just below wastewater treatment plant discharges at five urban sites across the country (Chicago, Dallas, Orlando, Phoenix, and West Chester, a suburb of Philadelphia). Fillet and liver samples were analyzed for 24 pharmaceuticals, and fillet samples only were analyzed for 12 personal care products. Release of the final EPA technical report for this study is pending.

The National Lake Fish Tissue Study was EPA's first probability-based assessment of chemical threats to U.S. water resources on a national scale. It involved collection of two types of fish samples (predators and bottom dwellers) from 500 lakes and reservoirs in the lower 48 states from 2000 through 2003. Predator fillet samples and bottom-dweller whole fish tissue samples were analyzed for mercury, arsenic, PCBs, dioxins and furans, pesticides, PBDEs and semivolatile organic compounds (e.g., polycyclic aromatic hydrocarbons or PAHs). The final technical report for all chemicals except the PBDEs was released in 2009, and an article reporting the PBDE data was published in 2013. Tasks for this study will focus on long-term data management, response to data requests, and preparation of final disposition and storage of project records and sample archives.

II. OBJECTIVE:

The primary objective of this work assignment is to provide scientific, technical, quality assurance (QA), and logistical support to the Office of Water's Office of Science and Technology (OST) and the Great Lakes National Program Office (GLNPO) to detect and identify threats to national water resources and human health by supporting surveillance monitoring of contaminants of concern in surface waters throughout the United States, focusing on rivers and the Great Lakes. To achieve this objective, the contractor shall conduct activities that include, but are not limited to, the following:

- provide logistical support for fish sample collection
- secure, coordinate, and monitor laboratory services for analysis of fish tissue samples for new and ongoing projects
- complete QA review of the analytical data received from multiple laboratories
- manage and store the analytical and related field data for each project
- prepare and review files for statistical analysis of analytical data and conduct statistical analysis of analytical data
- review and provide support for development of reports and outreach materials related to the analysis of fish tissue for contaminants of concern
- evaluate fish tissue sampling methods for contaminant monitoring
- provide technical support for a variety of other activities related to surveillance monitoring for contaminants of concern in fish

The intended audience for these surveillance monitoring projects includes states and other participants in EPA's National Rivers and Streams Assessments (NRSAs) and National Coastal Condition Assessments (NCCAs). These projects address programmatic support needs related to our national all hazards homeland security responsibilities by providing the first statistically representative toxic chemical baseline data for U.S. rivers and for the Great Lakes, along with subsequent sets of statistically representative toxic chemical data to assess trends in the occurrence of toxic chemical levels in fish, and to evaluate the effectiveness of policies, programs, and tools to protect and enhance the quality and security of water resources in rivers and the Great Lakes related to human health. This work assignment also contributes to the commitments made in EPA's *Strategic Plan (2011 to 2015)*, which references Goal 2 (Clean and Safe Water), Objective 2.1 (Protecting Human Health), Sub-objective 2.1.1 (Water Safe to Drink).

In support of these requirements, this contract supports the nation's drinking and wastewater infrastructure, collectively known as the Water Sector, in being informed, coordinated, and prepared to prevent, detect, respond to, and recover from terrorist attacks and other intentional acts, natural disasters, and other hazards (referred to as the "all hazards' approach), which may also occur, including the needs and challenges posed by natural disasters, catastrophic events, adaptation and impacts of climate change, floods, earthquakes, pandemic illness, and any other events which impact the safety and availability of our water supply.

In pursuit of these efforts, the contractor may be tasked with preparing a correlation summary comparing the results under this work assignment to the components of the Water Security Strategy framework.

This work will be completed commensurate with Sections 2.8, 2.15, 2.16, 2.17, 3.1.4, 3.1.5, 3.1.13, and 3.1.19 of the Contract Level PWS. The level of effort estimated for this work assignment is 3450 hours.

III. TASK DETAIL:

All direction under this WA will be provided as written technical direction from the WACOR, Alternate WACOR, or Task Manager (TM), as appropriate. If provided first as verbal technical direction to the contractor, it will be confirmed in writing within 5 calendar days, with a copy to the Contract Level Contracting Officer's Representative (CLCOR) and the Contracting Officer (CO), and is subject to the limitations of the technical direction contract clause. Each initial deliverable shall be provided to the EPA WACOR and EPA CLCOR in draft form for review and comment. The contractor shall incorporate WACOR review comments into revisions of the drafts. All drafts and final reports shall be approved by the WACOR.

The contractor shall perform the following tasks:

Task 0: Work Plan and Monthly Progress Reports

The contractor shall develop a work plan that describes how each task will be carried out. The

work plan shall include a schedule, staffing plan, level of effort (LOE), and cost estimate for each task, the contractor's key assumptions on which staffing plan and budget are based, and qualifications of proposed staff. If a subcontractor(s) is proposed and subcontractors are outside the local metropolitan area, the contractor shall include information on plans to manage work and contract costs.

For carryover Task 1 activities, the contractor shall prepare a statement indicating that these WA activities are a continuation of work conducted for WA 02-26 under EPA Contract No. EP-C-15-012. The work plan shall explain that collection, use and analysis of data in this work assignment will be identical to the procedures described in the existing 2015 GLHHFFTS CEC analysis PQAPP completed under WA 02-26. For new Task 1 analytical activities, the contractor shall prepare a new PQAPP as listed above and specified in Task 1, sub-task 1.2. Work on these new Task 1 analytical activities (i.e., 2018-19 NRSA fillet sample analyses for target chemicals) cannot proceed until the contractor receives notification of approval of the new CEC analysis PQAPP from the CLCOR via e-mail.

For carryover Task 3 activities, the contractor shall prepare a statement indicating that these WA activities are a continuation of work conducted for WA 02-26 under EPA Contract No. EP-C-15-012. The work plan shall explain that collection, use and analysis of data in this work assignment will be identical to the procedures described in the existing Fish Plug Evaluation Study Sample Analysis PQAPP completed under WA 02-26.

This task also includes monthly progress and financial reports. The monthly progress report shall indicate, in a separate QA section, whether significant QA issues have been identified and how they are being resolved. Monthly financial reports must include a table with the invoice LOE and costs broken out by the tasks in this WA.

Task 0 Deliverables: Work plan, monthly progress and financial reports, Checklist for Quality Assurance Project Plans, and Summary of Quality Assurance Activities and Issues by Work Assignment [**NOTE:** A new 2018-19 NRSA target chemical analysis PQAPP is listed as a deliverable under Task 1]

Task 1: Support for Surveillance Monitoring of Contaminants of Concern in U.S. Waters

The contractor shall provide support to characterize baseline levels of contaminants of concern and trends in contaminant levels in fish from U.S. rivers and the Great Lakes. This support will assist EPA in identifying contaminants that may be adversely impacting the quality and security of water resources important for human health, including the quality of source waters for drinking water and the level of contamination in fish species commonly consumed by humans. Support for this task will focus on implementing fish sample collection and analysis for the 2018-19 NRSA; on completing chemical analysis of fish fillet tissue samples for the 2015 GLHHFFTS under the NCCA; on conducting QA review of 2015 GLHHFFTS and 2018-19 NRSA fillet tissue data; on managing fish tissue study data; and on preparing files for statistical analysis and/or public release of fish tissue chemical data. The 2015 GLHHFFTS is the second statistically representative study of toxic chemical residues in Great Lakes fish, and the 2018-19 NRSA is the third statistically representative study of toxic chemical residues in fish from U.S.

rivers. Fish fillet data from these studies will allow EPA to characterize temporal trends in the contaminant levels measured in Great Lakes fish when compared to fish fillet results from the 2010 GLHHFTS and in river fish when compared to fish fillet results from the 2013-14 NRSA. Contractor support for this task will consist of a broad range of activities for the 2018-19 NRSA, for the 2015 GLHHFFTS, and for other ongoing EPA fish tissue studies, including fish sampling support, laboratory services support, data review and other QA support, data management support, and data analysis and release support. Specific activities to be performed under this task are described in sub-tasks 1.1 through 1.5.

1.1 Fish Sampling Support

The contractor shall provide support for the collection and shipment of human health whole fish tissue samples under the 2018-19 NRSA. This support consists of, but is not limited to, the following:

- planning the logistics to implement fish sample collection support for the study
- obtaining fish sampling supplies for distribution to field crews conducting field sampling at the 2018-19 NRSA river sites designated for human health fish sampling (e.g., solvent-rinsed sheets of heavy-duty foil for wrapping individual fish in each composite sample and coolers for shipping the fish samples)
- providing for shipping of whole fish tissue sampling supplies for the 2018-19 NRSA to the NRSA field sampling supply distribution center in Traverse City, MI and directly to field crews, as applicable
- developing mechanisms for field crews to obtain dry ice for fish sample preservation prior to and during shipment of coolers containing human health whole fish tissue samples designated as FTIS samples for the 2018-19 NRSA
- providing for shipping of 2018-19 NRSA whole fish tissue samples from field or facility locations to an interim storage facility used by EPA at Microbac Laboratories in Baltimore, MD
- tracking shipment of 2018-19 NRSA whole fish tissue samples collected during the 2018 field sampling season

The contractor shall provide support for planning the logistics to implement fish sample collection for the 2018-19 NRSA Human Health Fish Tissue Study. A senior statistician in EPA's Office of Research and Development developed the design for this study and selected 477 river sites for whole fish tissue sample collection. The contractor shall provide support for planning logistics to conduct whole fish sample collection at these 477 river sites.

The contractor shall obtain fish sampling supplies for the 2018-19 NRSA Human Health Fish Tissue Study, including solvent-rinsed sheets of heavy-duty foil for wrapping individual fish specimens in each sample and coolers for shipping fish samples. The contractor shall obtain and monitor laboratory services to prepare and deliver up to 2000 sheets of solvent-rinsed heavy-duty foil using the same foil preparation protocols (e.g., foil sheet dimensions, type of solvent, solvent-rinsed foil baking temperature and duration, folding and bagging procedures for the treated sheets of foil, etc.) that were applied in preparing batches of solvent-rinsed foil sheets under WA 02-26. It is critical that the laboratory prepare the solvent-rinsed foil sheets using heavy-duty foil for durability of the sheets during fish sampling operations. To ensure use of

sufficiently strong heavy-duty foil for the solvent-rinsed sheets, the contractor shall provide appropriately sized rolls of heavy-duty aluminum foil to the laboratory designated for preparation of the solvent-rinsed foil sheets. In addition, the contractor shall obtain up to 60 coolers to increase the cooler supply available for shipping 2018-19 NRSA whole fish samples. The contractor shall provide coolers of the same brand, color, and size as the coolers currently available for transporting and shipping the 2018-19 NRSA fish samples. The WACOR will provide cooler specifications to the contractor.

The contractor shall provide shipping support for 2018-19 NRSA whole fish tissue sampling supplies. These fish sampling supplies shall be organized into individual human health whole fish sampling kits, packed into coolers (one sampling kit per cooler), sealed with tape and a custody seal, and shipped (generally via FedEx ground transportation unless there is a time critical need for shipment of one or more coolers via overnight air delivery) to the 2018-19 NRSA field sampling supply distribution center in Traverse City, MI or to an alternative destination specified by the WACOR. Each sampling kit shall include a pre-addressed shipping bill for priority overnight air delivery of fish samples with the "Sender" information left blank for the field crews to complete when they have a fish sample ready to ship back in the cooler. The WACOR will provide the name and address of the coordinator at the supply distribution center and shipping information for any alternative destination, as applicable. During the WA period of performance, the contractor shall assume there will be up to 280 coolers with fish sampling kits to ship to the supply distribution center or to an alternative location or locations specified by the WACOR. For the purpose of estimating costs, the combined weight of a cooler and fish sampling kit is about 16 lbs. The Contractor shall track progress of supply shipments and report the following to the WACOR:

- interim shipping status (when problems develop during shipment)
- resolution of shipping issues
- delivery date and time on the day of delivery

The contractor shall provide mechanisms for field crews collecting whole fish tissue samples for the 2018-19 NRSA to obtain dry ice for shipping these samples to Microbac Laboratories in Baltimore, MD for interim storage. Shipping protocols specify using 50 pounds of dry ice per cooler for shipment of the whole fish samples. The WACOR will identify field crews that require dry ice for fish sample shipment. EPA anticipates the need to supply sufficient dry ice (allowing for sublimation of dry ice prior to packing fish composite samples in coolers for shipment) for shipping up to 100 coolers of fish samples during the WA period of performance.

The contractor shall be responsible for providing shipping support to transport 2018-19 NRSA human health fish samples collected during the 2018 field season via priority overnight air delivery from NRSA field or facility locations to Microbac Laboratories in Baltimore, MD. The contractor shall track all shipments of fish samples using shipping information in email notifications from EPA's National Aquatic Resource Survey (NARS) sample tracking system based in Corvallis, Oregon or directly from field crews. The contractor shall report progress of each fish sample shipment initiated by 2018-19 NRSA field crews, including notifying the WACOR of any shipping problems when they arise and providing the cooler delivery date to the WACOR once confirmation of delivery is available from the overnight delivery service. The contractor shall also notify the WACOR about the condition of each fish sample within 24 hours

after fish sample delivery. EPA anticipates shipment of up to 300 coolers during the WA period of performance.

Task 1.1 Deliverables: Fish sampling supplies; Delivery notifications for 2018-19 NRSA fish sampling kit shipments; Notifications for delivery of 2018-19 NRSA whole fish samples and for sample condition.

1.2 Laboratory Services Support

The contractor shall provide technical and logistical support for planning, securing, coordinating, and monitoring laboratory services for 2018-19 NRSA fillet samples for target chemicals (e.g., mercury, PCBs, and PFCs). The contractor shall also provide technical and logistical support for coordinating and monitoring ongoing laboratory services for analysis of 2015 GLHHFFTS fillet tissue samples for CECs. The contractor shall provide laboratory services support that includes, but is not limited to, the following activities:

- defining laboratory requirements for 2018-19 NRSA target chemical analyses
- preparing and distributing statements of work (SOWs) for analytical laboratories to analyze 2018-19 NRSA fillet samples for target chemicals
- evaluating responses to each of the SOWs to secure laboratory services from experienced laboratories with demonstrated technical qualifications for analysis of fillet tissue samples for each of the target chemicals (mercury, PCBs, and PFCs)
- preparing a new 2018-19 NRSA Sample Analysis PQAPP that includes the required information and procedures for analysis of fillet tissue samples for each of the target chemicals
- coordinating shipments of 2015 GLHHFFTS fillet tissue samples for CEC analysis and 2018-19 NRSA fillet tissue samples for target chemical analyses, and providing support for shipping the tissue samples to the designated analytical laboratories
- maintaining continuous oversight of the CEC analytical laboratory work performance and the performance of the analytical laboratories designated for analysis of each of the 2018-19 NRSA target chemicals
- developing formats for analytical data reporting
- providing ongoing support to furnish a secure and properly maintained freezer facility for long-term storage of archived fish tissue samples from the series of EPA fish tissue studies

The contractor shall define laboratory requirements for analysis of 2018-19 NRSA fillet tissue samples for target chemicals (mercury, PCBs, and PFCs) to achieve consistency with method requirements, detection limits, and quantitation limits applied for analysis of the corresponding chemicals under recent fish tissue studies (e.g., 2013-14 NRSA).

The contractor shall prepare the SOWs for analysis of 2018-19 NRSA fillet samples for target chemicals using the same format and type/level of detail of information applied in the preparation of SOWs for these target chemicals for the 2015 GLHHFFTS. In developing the target chemical SOWs, the contractor shall also incorporate requirements from applicable EPA laboratory competency policy (available online at http://www.epa.gov/fem/lab_comp.htm) to determine laboratory qualifications. Based on the study design, the contractor shall assume

analysis of up to 477 fillet samples for each target chemical. The contractor, in accordance with their own internal procurement procedures, shall use available information or contact laboratories directly to identify laboratories qualified to respond to these SOWs. Prior to distributing the SOW for each target chemical to qualified laboratories for response, the contractor shall provide an electronic copy of each draft SOW for WACOR review and incorporate WACOR comments into each draft SOW to produce the corresponding final SOW. The contractor shall be responsible for using a competitive process to obtain analytical laboratory services for analysis of the 2018-19 NRSA fish fillet tissue samples for each target chemical, which includes the following:

- distributing the respective SOWs to qualified laboratories
- evaluating laboratory responses to the SOWs and securing services for each target chemical analysis from an experienced laboratory with demonstrated technical qualifications to successfully meet the requirements for analyzing fillet tissue samples
- reporting the results of the competitive process to the WACOR

Prior to the selected analytical laboratories initiating target chemical analysis of 2018-19 NRSA fillet tissue samples, the contractor shall prepare a new project-specific QAPP (PQAPP) for analyzing 2018-19 NRSA fillet samples for each target chemical. In preparing this PQAPP, the contractor shall follow current EPA guidance for QAPP development. The contractor shall prepare a draft PQAPP for WACOR review and incorporate WACOR comments on the draft PQAPP to produce the draft final PQAPP for review by the WACOR and other individuals designated for PQAPP approval. The contractor shall produce a final signed 2018-19 NRSA Sample Analysis PQAPP based on final comments from the WACOR, who will compile and forward comments from all the reviewers and signatures of the approvers. The contractor shall prepare and deliver electronic copies of the final signed PQAPP in two formats, Word and PDF. The WACOR will circulate the final signed PQAPP to the PQAPP distribution list and forward a signed copy of the PQAPP to the CLCOR for approval. The contractor shall apply this same process to prepare any subsequent revisions to the initial 2018-19 NRSA Sample Analysis PQAPP.

The contractor shall coordinate shipments of 2015 GLHHFFTS fish fillet tissue samples to the Clarkson University laboratory in upstate New York that is conducting ongoing analyses of these samples for CECs. The contractor shall also coordinate shipments of 2018-19 NRSA fillet samples to the laboratories designated to analyze these samples for mercury, PCBs, and PFCs. The contractor shall coordinate scheduling of fillet tissue sample shipments to the applicable analytical laboratories with the Tetra Tech fish sample preparation laboratory in Owings Mills, MD. The contractor shall also provide shipping support to transport the 2015 GLHHFFTS and the 2018-19 NRSA fillet tissue samples from the Owings Mills, MD facility to the respective analytical laboratories via priority overnight air delivery. For each fish tissue sample shipment, the contractor shall track the progress of the fillet tissue sample shipment, contact the overnight air delivery service immediately to resolve any problems that develop during shipment of the tissue samples, notify the WACOR within 24 hours about any shipping problems and their resolution, confirm receipt of coolers with the laboratory and notify the WACOR on the day of their delivery, and report fillet tissue sample condition to the WACOR within 24 hours after the coolers have been delivered to the laboratory. For cost estimating purposes, assume that coolers containing one batch of 20 samples each will be shipped to the applicable analytical laboratories.

During the work assignment period of performance, EPA estimates that up to four coolers of 2015 GLHHFFTS fillet samples for CEC analysis will be shipped to Clarkson University and that up to 12 coolers of 2018-19 NRSA fillet samples will be shipped to each of the analytical laboratories designated for analysis of target chemicals. In addition, assume that each cooler will be packed with enough dry ice to keep the tissue sample jars solidly frozen for at least 48 hours (a minimum of 30 lbs. per cooler).

The contractor shall maintain continuous oversight of laboratory work performance for the Clarkson University laboratory analyzing 2015 GLHHFFTS fillet tissue samples for CECs and for the laboratories analyzing 2018-19 NRSA fillet samples for target chemicals. In monitoring laboratory performance, the contractor shall track compliance of each laboratory with technical and QA requirements and adherence to the data delivery schedule. The contractor shall notify the WACOR within 24 hours if any problems develop with the quality or timeliness of work being performed by the laboratories conducting analysis of 2015 GLHHFFTS fillet samples for CECs and 2018-19 NRSA fillet samples for target chemicals and initiate corrective actions to address these problems. Corrective actions for fillet tissue sample analysis quality issues are specified in the existing 2015 GLHHFFTS CEC Analysis PQAPP and in the 2018-19 NRSA Sample Analysis PQAPP developed under WA 03-26, respectively.

The contractor shall ensure that the analytical laboratories apply formats for reporting 2015 GLHHFFTS fillet tissue CEC data and 2018-19 NRSA fillet target chemical data that are consistent with requirements in the existing 2015 GLHHFFTS CEC analysis PQAPP and the new 2018-19 NRSA Sample Analysis PQAPP, respectively. The contractor shall also ensure that the analytical laboratory data reporting formats will facilitate application of manual and automated review procedures developed for previous fish contamination studies (e.g., 2013-14 NRSA) and applied to the ongoing studies (e.g., 2018-19 NRSA).

The contractor shall continue to provide a secure freezer facility for storing archived fish tissue samples from EPA fish tissue studies that meets the specifications in the 2015 GLHHFFTS PQAPP for long-term storage of these samples (e.g., freezer temperature maintained at less than or equal to minus 20°C). A freezer at Microbac Laboratories in Baltimore, MD is the current repository for the archived fish tissue samples. It currently contains 5,748 jars of NLFTS fish tissue samples, 304 jars of 2010 GLHHFTS fish tissue samples, and 991 jars of 2013-14 NRSA fish tissue samples. During the WA period of performance, up to 600 jars of 2015 GLHHFFTS fish tissue samples will be transferred to the secure freezer facility for long-term storage. The contractor shall integrate these project-specific tissue samples into the freezer, organize them in the available freezer space, develop an electronic inventory of the 2015 GLHHFFTS archived fish tissue samples (based on inventory formats used for previous fish tissue studies), and submit a copy of this inventory to the WACOR. For archived tissue samples from all the EPA fish tissue studies, the contractor shall ensure that the archived fish tissue samples are labeled according to PQAPP specifications, organize the archived samples in the freezer by project, develop project-specific inventories of archived fish tissue samples, submit electronic copies of the inventories to the WACOR, and manage the long-term storage of the archived samples. The archived sample inventories shall identify the EPA fish tissue study and include information on the content and condition of each sample being stored for that study and on the location in the freezer of each sample associated with that study. The contractor shall update applicable

inventories when archived fish tissue samples are removed or added to the long-term storage facility and submit revised archived sample inventories to the WACOR. The contractor shall not remove any archived fish tissue samples either temporarily or permanently from the freezer without written approval from the WACOR. The contractor shall notify the WACOR via email within 24 hours of the arrival of new archived fish tissue samples from any of the analytical laboratories working on fish tissue analyses for ongoing EPA fish tissue studies.

Task 1.2 Deliverables: Draft and final 2018-19 NRSA SOWs for target chemical analysis of fillet samples; Draft, draft final, and final 2018-19 NRSA Sample Analysis PQAPP; Coordination of 2015 GLHHFFTS and 2018-19 NRSA fillet sample shipments; Fillet tissue sample shipment delivery and condition notifications; Analytical results for CEC analysis of 149 2015 GLHHFFTS fillet tissue samples; Analytical results for analyses of 2018-19 NRSA fillet samples for target chemicals; Archived fish tissue sample inventories.

1.3 Data Review and Other QA Support

The contractor shall apply manual and automated systems for qualitative and quantitative review of analytical and quality control (QC) data generated by analytical laboratories during preparation and analysis of the 2015 GLHHFFTS and the 2018-19 NRSA fillet tissue samples. The contractor shall review the data for completeness, accuracy, and compliance with QC procedures, acceptance criteria, and reporting requirements specified in the existing 2015 GLHHFFTS CEC analysis PQAPP and in the new 2018-19 NRSA Sample Analysis PQAPP. The contractor shall also validate the quality of the data by evaluating data quality and assigning flags consistent with those used to validate fillet tissue data for previous fish tissue studies (e.g., the 2013-14 NRSA) to identify results with potential quality issues. On a monthly basis, the contractor shall prepare and submit a data review progress report that includes information on receipt of data from the laboratories analyzing 2015 GLHHFFTS and 2018-19 NRSA fillet tissue samples. The contractor shall report laboratory progress on analysis of 2015 GLHHFFTS fillet tissue samples for CECs and 2018-19 NRSA fillet samples for each target chemical, along with the status of contractor review of the data from each laboratory. In the data review progress reports, the contractor shall also identify any analytical results with potential quality problems based on QC requirements specified in the respective sample analysis PQAPPs. For cost estimating purposes, assume QA review of the following 2015 GLHHFFTS and 2018-19 NRSA analytical data sets and the QC data associated with each data set:

- the remaining 2015 GLHHFFTS CEC analytical and QC data (up to 6 batches)
- the 2018 NRSA fish sample preparation QC data (up to 12 batches)
- the 2018-19 NRSA fillet tissue mercury analytical and QC data (up to 12 batches)
- the 2018-19 NRSA fillet tissue PCB analytical and QC data (up to 12 batches)
- the 2018-19 NRSA fillet tissue PFC analytical and QC data (up to 12 batches)

The contractor shall provide support for a number of other QA activities, including, but not limited to, the following:

- preparing revisions to update existing fish tissue study project-specific analytical activities QAPPs (PQAPPs), as necessary
- compiling target chemical information to incorporate into project-specific QA reports that summarize results of the analytical data quality reviews and describe qualification of any

analytical results during the review process for fish tissue studies where fish tissue analysis and QA data reviews have been completed (e.g., the 2015 GLHHFFTS)
- developing materials that describe and document the status of QA activities related to chemical analysis of EPA fish tissue study samples for EPA management briefings, meeting presentations, annual OST QA reports, and QA audits (if scheduled during the work assignment period of performance)
- documenting target chemical QA information to respond to EPA requirements for development of Information Quality Guidelines

The contractor shall prepare fish tissue study analytical QA reports after completion of the QA data review for each study with content and format consistent with the content and format used to present analytical and related information in the National Lake Fish Tissue Study (NLFTS) analytical QA report unless otherwise specified by the WACOR. The NLFTS QA report is available online at https://www.epa.gov/fish-tech/national-lake-fish-tissue-study-reports. The contractor developed an initial draft analytical QA report for the 2010 GLHHFTS and the 2013-14 NRSA during previous work assignments. The contractor shall prepare draft final and final 2010 GLHHFTS and 2013-14 NRSA QA reports during this work assignment period of performance based on comments from the WACOR. The contractor shall also prepare and submit an initial draft, draft final, and a final 2015 GLHHFFTS analytical QA report following the same process applied for development of QA reports for previous fish tissue studies. The WACOR will review and approve all final fish tissue study analytical QA reports.

The WACOR will specify format and content for development of materials to document other QA activities, as required. In addition to the development of data review monthly progress reports and the project-specific analytical QA reports, assume the following other QA activities for cost estimating purposes: preparation and submission of fish tissue study analytical QA information for the annual OST QA report and development of materials documenting QA activities related to EPA fish tissue study target contaminants of concern for three briefings, three meeting presentations, and four scientific journal articles.

Task 1.3 Deliverables: Data review monthly progress reports; Draft final and final analytical QA reports for the 2010 GLHHFTS and the 2013-14 NRSA fish tissue study; Initial draft, draft final and final analytical QA report for the 2015 GLHHFFTS; Analytical QA documentation for briefings, presentations, and scientific journal articles.

1.4 Data Management Support

The contractor shall provide both manual and automated systems to manage chemical data and related study information for EPA fish tissue studies. The contractor shall utilize these systems to conduct the following types of activities:
- chemical data receipt, storage, and retrieval
- organization and maintenance of project-specific data, which incorporates the chemical data for the respective fish tissue studies and the associated field data and statistical information
- sample analysis tracking
- development of project-specific data files (e.g., statistical analysis input files,files for

distribution to states and other participants in each fish tissue study, and public release data files)
- preparation of computerized reports to identify errors, to provide information for management briefings or technical presentations, and to produce data summaries or graphics for a variety of applications

The contractor shall receive and store chemical data and related study information for EPA fish tissue studies, including historical data/information and data/information gathered during this work assignment period of performance. These data will typically be in electronic formats, but some data and study information may be delivered as hard copy. The contractor shall maintain an automated inventory of these data and related information and shall provide a secure facility to store project-specific data in an organized, retrievable manner.

The contractor shall use Microsoft Access software to develop a new project-specific database for the 2018-19 NRSA Human Health Fish Tissue Study that incorporates field, laboratory, and statistical data, along with related project information. The 2018-19 NRSA Access database structure, content, and organization shall be consistent with Access databases prepared for previous EPA fish tissue studies (e.g., 2013-14 NRSA). This new database will be the seventh in a series of project-specific Access databases that have been organized to efficiently receive, store, manipulate, and retrieve information and data for each individual EPA fish tissue study. The contractor shall also incorporate the remaining 2015 GLHHFFTS fish tissue data into the existing project-specific database. In addition, the contractor shall continue to maintain the existing project-specific Access databases developed for previous EPA fish tissue studies and provide documentation on the structure, content, organization, and function for each of the seven databases consistent with a user manual format. For all seven project-specific Access databases, the contractor shall provide technical support for database maintenance that includes, but is not limited to, testing for data completeness and accuracy and incorporation of data security measures to maintain the integrity and security of the fish tissue study data.

The contractor shall provide support to respond to requests for data and related information for EPA fish tissue studies. These requests will generally require quick responses within a period of one or two days. For responses to requests, the contractor shall retrieve and compile data and other related information, prepare data and related information files in appropriate formats (e.g., data files in Excel and data dictionaries in Word), and distribute the files as directed by the WACOR. For cost estimating purposes, assume responses to 50 data requests during the work assignment period of performance.

Task 1.4 Deliverables: New 2018-19 NRSA and final 2015 GLHHFFTS Access databases Fish study Access database user documentation; Fish tissue study data request responses.

1.5 Data Analysis and Release Support

The contractor shall provide support for statistical analysis and release of EPA fish tissue study data. EPA analyzes environmental data (e.g., fish tissue data) from probability surveys (e.g., the 2018-19 NRSA) using agency-developed custom programs in R statistical software. These programs generate statistical results, such as weighted (due to unequal probability-based study

designs) means, medians, standard deviations, percentiles, and cumulative distribution functions with confidence intervals. The contractor shall prepare chemical-specific input data files for statistical analysis of the fish tissue study analytical results that incorporate data for each sample and for each chemical or chemical group from all the valid probability-based fish tissue samples. In developing these statistical input files, the contractor shall apply appropriate formats of statistical input files used for previous fish tissue studies (e.g., Excel files that apply the format of the chemical-specific 2013-14 NRSA statistical input files for development of the corresponding chemical-specific 2018-19 NRSA statistical input files). These statistical data input files shall also serve as files for online public release of the data on EPA's Fish Program web pages. Only partial 2018-19 NRSA target chemical data sets will be generated during the WA period of performance, so the contractor shall not be required to prepare new statistical input fish tissue data files for WA 03-26. Instead, the contractor shall focus on revising existing statistical input data files into consistent formats for online public release of these data (e.g., 2013-14 NRSA and 2015 GLHHFFTS chemical-specific fish tissue data files).

The contractor shall also provide support for development of comparative analyses of probability-based fish tissue data as directed by the WACOR. These analyses may include, but are not limited to, various statistical comparisons of fish tissue data sets to test for statistically significant differences between or among fish tissue data sets. The contractor shall plan, perform, and prepare summaries of the statistical results for incorporation into technical reports and/or articles for publication in scientific journals.

Task 1.5 Deliverables: Final chemical-specific data files for online public release of fish tissue study data; Comparative analyses of fish tissue data.

Task 2: Support for Reporting Results of Contaminant Surveillance Monitoring in U.S. Waters

The contractor shall provide support for reporting results of EPA fish tissue studies conducted for surveillance monitoring of contaminants of concern in national water resources, including results from the 2013-14 NRSA fish tissue study and the NCCA 2015 GLHHFFTS. These data will assist EPA in evaluating the effectiveness of policies, programs, and tools to protect and enhance the quality of water resources related to human health in U.S. rivers and the Great Lakes. Support for this task will focus on reporting results of target chemical analyses of 2013-14 NRSA and 2015 GLHHFFTS fish tissue samples, including development of data summaries, technical reports and presentations, and articles for scientific journals. Support for this task will also include preparation of information (i.e., text and graphics) for development of a variety of outreach materials related to the EPA fish tissue studies. Specific activities to be performed under this task are described in sub-tasks 2.1 and 2.2.

2.1 Technical Document Support

The contractor shall provide support for development of technical documents to report 2013-14 NRSA and 2015 GLHHFFTS target chemical results and compare these results to similar chemical results from related EPA studies (e.g., the 2010 GLHHFTS). These technical documents may include, but are not limited to, data summaries, project-specific technical reports,

and scientific journal articles for release and publication of the target chemical data. Contactor support for technical document development may include, but is not limited to, the following:

- preparation of data summaries, text, and graphics for incorporation into technical reports or scientific journal articles
- compilation, analysis, and integration of data and related technical information from multiple sources into a technical document
- application of EPA-compatible software for document production (e.g., Word)

Examples of technical documents that EPA has planned for development during the work assignment period of performance include the following:

- a scientific article on the 2013-14 NRSA results for mercury, PCBs, and PFCs
- a scientific article on the 2015 GLHHFFTS results for mercury and PCBs
- a scientific article on the 2015 GLHHFFTS results for PFCs
- a scientific article on the 2015 GLHHFFTS results for dioxins and furans
- a scientific article on the 2015 GLHHFFTS results for fatty acids

The contractor shall provide a draft of all materials developed for technical documents to the WACOR for approval, and shall prepare the final document materials based on WACOR comments on the draft materials. In developing technical document materials, the contractor shall comply with all the EPA requirements for production and publication of technical reports and with all the requirements for publication of articles in applicable scientific journals. The WACOR will provide information about agency requirements for publication of technical reports. The WACOR will identify journals for submission of scientific articles, and the contractor shall obtain the publication requirements for each journal and incorporate these requirements into materials for scientific article development. For technical document printing, the contractor shall provide a camera-ready copy and a disk copy (or other electronic storage media, such as a flash drive) of technical document materials in a format that enables the materials to be uploaded onto the Internet.

Task 2.1 Deliverables: Materials for development of up to 8 technical documents.

2.2 Outreach Materials Support

The contractor shall provide support for development of outreach materials related to monitoring fish tissue for contaminants of concern under the 2018-19 NRSA, 2015 GLHHFFTS, 2013-14 NRSA, 2010 GLHHFTS, 2008-09 NRSA, NLFTS, and PPCP Fish Pilot Study. Outreach materials may include, but are not limited to, fact sheets, posters, talking points, electronic slide shows, camera-ready copy, and web site materials (e.g., text and graphics). The materials shall be developed for use in media events (e.g., press releases), briefings, meetings, and presentations at conferences or other events. All materials shall be provided in accordance with the limitations set forth in the Section H clause titled "PRINTING (EPAAR 1552.208-70)." EPA anticipates that outreach materials support during the work assignment period of performance will focus on development of poster, electronic slide show, and web site materials. The contractor shall provide a draft of all materials for approval by the WACOR, and shall prepare the final materials based on WACOR comments on the draft materials. In developing outreach materials, the contractor shall translate complex scientific information into simplified, accurate public

communications information. For print products, the contractor shall provide a camera-ready copy and a disk copy (or other electronic storage media, such as a flash drive) in a format that enables the material to be uploaded onto the Internet.

Task 2.2 Deliverables: Various outreach materials for preparation of up to 12 outreach products.

Task 3: Support for Evaluation of Fish Tissue Sampling Methods for Contaminant Monitoring

The contractor shall provide support for implementing a study designed to evaluate the comparability of results from sampling and analysis of various types of fillet tissue samples for contaminants of concern, focusing on toxic metals (i.e., mercury and selenium). The primary purpose of this study, referred to as the Fish Plug Evaluation Study, is to determine if fillet plug sampling and analysis can serve as a reliable surrogate for whole fillet tissue sampling, homogenization, and analysis (the approach applied for all EPA human health fish tissue studies to date) for monitoring mercury levels in fish. Additionally, this study will investigate if it is technically feasible to apply fillet plug sampling and analysis for monitoring selenium concentrations in fish to determine compliance with the EPA tissue-based water quality criterion for selenium. The initial study design was revised in August 2017 to add one Great Lake to the sampling locations, in September 2017 to change two river sampling locations and a river target species, and in May 2018 to add collection of 120 lab-extracted fillet plug samples (2 plugs per sample) for selenium analysis and 240 single-plug fillet samples for percent moisture analysis that correspond to each field-extracted and lab-extracted fillet plug sample collected for selenium analysis. The revised study design involves the following elements:

1. Fish sampling is conducted in two waterbody types, the Great Lakes and U.S. rivers. Lake Erie, Lake Michigan and Lake Ontario are target locations for Great Lakes fish collection, and the Anacostia River, the Potomac River, and the St. Lawrence River are target locations for river fish collection.
2. Individual whole fish samples are collected from each waterbody type to provide plug and homogenized fillet tissue samples for mercury and selenium analyses.
3. To provide fillet tissue samples for mercury analysis, 10 specimens of three species each were collected from the designated Great Lakes during August 2017 and from the designated rivers during September 2017. Target species for the Great Lakes are lake trout, walleye, and Chinook salmon. Target species for the rivers are largemouth bass, smallmouth bass, and blue catfish. This fish sampling effort yielded 60 individual whole fish samples that were prepared for mercury analysis.
4. Five replicates each of three types of fish tissue samples were prepared from each fish for mercury analysis: field-extracted fillet plug samples, lab-extracted fillet plug samples, and lab-prepared homogenized fillet tissue samples, yielding 900 fillet tissue samples for mercury analysis (60 fish x 3 tissue sample types per fish x 5 replicates per tissue sample type = 900 fillet tissue samples).
5. To provide fillet tissue samples for selenium analysis, 5 specimens of three species each were collected from the designated Great Lakes and from the designated rivers. Target species for the Great Lakes and rivers are the same as for mercury (i.e., lake trout, walleye, and Chinook salmon for the Great Lakes and largemouth bass, smallmouth bass, and blue catfish for the rivers). This fish sampling effort yielded 30 individual whole fish samples to be prepared for

selenium analysis.

6. Four replicates each of three types of fish tissue samples are being prepared from each fish for selenium analysis: field-extracted fillet plug samples, lab-extracted fillet plug samples, and lab-prepared homogenized fillet tissue samples, yielding 360 fillet tissue samples for selenium analysis (30 fish x 3 tissue sample types per fish x 4 replicates per tissue sample type = 360 fillet tissue samples). In addition, 240 single-plug fillet samples and 120 one-gram homogenized fillet samples corresponding to each of the 240 fillet plug samples (120 field plug samples and 120 lab plug samples) and 120 homogenized fillet samples prepared for selenium analysis will be analyzed for percent moisture (total of 360 percent moisture samples). The 360 paired selenium and percent moisture results allow for conversion of wet weight selenium concentrations to dry weight concentrations for direct comparison with the tissue-based selenium water quality criterion, which is expressed as a dry weight concentration.

Under Task 3, the contractor shall provide a broad range of support that includes laboratory services support, quality assurance (QA) support, data management support, and data analysis and reporting support. Specific activities to be performed under this task are described in sub-tasks 3.1 through 3.4.

3.1 Laboratory Services Support

The scope of laboratory services support initially described for the selenium phase of the Fish Plug Evaluation Study under WA 02-26 involved analyses of 240 fillet samples for selenium and 30 fillet tissue aliquots for percent moisture. Study design revisions described at the beginning of Task 3 have increased the scope of laboratory services support required for the selenium phase of the Fish Plug Evaluation Study to analysis of 360 fillet samples for selenium and 360 fillet tissue aliquots for percent moisture (i.e., for every fillet sample analyzed for selenium, there is a corresponding fillet sample analyzed for percent moisture). This increase in scope adds 120 lab-extracted fillet plug samples for selenium analysis and 330 fillet samples for percent moisture analysis.

The contractor obtained laboratory services for analysis of Fish Plug Evaluation Study fillet tissue samples for mercury and selenium under the previous work assignment (WA 02-26). During the WA 03-26 period of performance, the contractor shall provide ongoing technical and logistical support to complete mercury analysis and the paired selenium and percent moisture analyses of fillet samples for this study. The contractor shall continue to provide laboratory services support that includes, but is not limited to, the following activities:

- coordinating shipments of fish fillet tissue samples for mercury analysis and for selenium and percent moisture analyses, and providing support for shipping the tissue samples to the designated analytical laboratories.
- maintaining continuous oversight of laboratory work performance
- developing formats for data reporting
- providing oversight for preparation of fillet tissue samples for archive (if excess homogenized whole fillet tissue is available) and storing them in the freezer facility maintained for long-term storage of archived EPA fish tissue samples

The contractor shall coordinate shipments of Fish Plug Evaluation Study fillet tissue samples (fillet plug samples and homogenized whole fillet samples) to the laboratories designated for mercury analysis and for selenium and percent moisture analyses, respectively. The contractor shall coordinate scheduling of the fillet sample shipments to the applicable analytical laboratories with the Tetra Tech fish sample preparation laboratory in Owings Mills, MD. The contractor shall also provide shipping support to transport the Fish Plug Evaluation Study fillet tissue samples from the Tetra Tech facility in Owings Mills, MD to the designated analytical laboratories via priority overnight air delivery. For each fillet tissue sample shipment, the contractor shall track the progress of the sample shipment, contact the overnight delivery service immediately to resolve any problems that develop during shipment of the tissue samples, notify the WACOR within 24 hours about any shipping problems and their resolution, confirm receipt of coolers with the laboratory and notify the WACOR on the day of their delivery, and report fillet tissue sample condition to the WACOR within 24 hours after the coolers have been delivered to the laboratory. For cost estimating purposes, assume that there will be up to 18 batches of fillet tissue samples (20 samples per batch) to ship to the laboratory designated for mercury analysis. Additionally, assume that there will be up to 18 batches of homogenized fillet tissue samples (each batch consisting of 20 pairs of fillet samples for selenium and percent moisture analyses) to ship to the laboratory designated for selenium analysis. For all fillet tissue sample shipments, also assume that each cooler will be packed with enough dry ice to keep the tissue sample jars solidly frozen for at least 48 hours (a minimum of 30 lbs. of dry ice per cooler).

The contractor shall maintain continuous oversight of laboratory work performance for the laboratories analyzing Fish Plug Evaluation Study fillet tissue samples for mercury and for selenium and percent moisture. In monitoring laboratory performance, the contractor shall track compliance of each laboratory with technical and QA requirements and adherence to the data delivery schedule. The contractor shall notify the WACOR within 24 hours if any problems develop with the quality or timeliness of work being performed by the laboratories conducting analysis of Fish Plug Evaluation Study fillet tissue samples and shall initiate corrective actions to address these problems. Corrective actions for quality issues are specified in the Fish Plug Evaluation Study sample analysis PQAPP.

The contractor shall ensure that the analytical laboratories apply formats for reporting Fish Plug Evaluation Study mercury fillet tissue data and paired selenium and percent moisture fillet tissue data that are consistent with requirements in the Fish Plug Evaluation Study sample analysis PQAPP and that will facilitate application of manual and automated review procedures developed for other EPA fish tissue studies.

Task 3.1 Deliverables: Fillet tissue sample shipment delivery and condition notifications; Analytical results for mercury; Paired analytical results for selenium and percent moisture.

3.2 Quality Assurance (QA) Support

The contractor shall apply manual and automated systems for qualitative and quantitative review of analytical and quality control (QC) data generated by analytical laboratories during mercury analysis and the paired selenium and percent moisture analyses of the Fish Plug Evaluation

Study fillet tissue samples. The contractor shall review the data for completeness, accuracy, and compliance with QC procedures, acceptance criteria, and reporting requirements specified in the Fish Plug Evaluation Study sample analysis PQAPP. The contractor shall also validate the quality of the data by evaluating data quality and assigning flags consistent with those used to validate fillet tissue data for EPA fish tissue studies (e.g., the 2015 GLHHFFTS) to identify results with potential quality issues. On a monthly basis, the contractor shall prepare and submit a data review progress report that includes information on receipt of data from the laboratories analyzing Fish Plug Evaluation Study fillet tissue samples and submitting analytical and the associated QC data for this study. The contractor shall report laboratory progress on analysis of Fish Plug Evaluation Study fillet tissue samples for mercury and for selenium and percent moisture, along with the status of contractor review of the data from each laboratory. In the data review progress reports, the contractor shall also identify any analytical results with potential quality problems based on QC requirements specified in the Fish Plug Evaluation Study sample analysis PQAPP. For cost estimating purposes, assume QA review of the following Fish Plug Evaluation Study analytical data sets and fish sample preparation QC data results:

- mercury phase fish sample preparation QC data (up to 12 batches)
- the mercury analytical and QC data (up to 15 batches)
- mercury phase lipid data (up to 15 batches)
- selenium phase fish sample preparation QC (12 batches)
- the selenium analytical and QC data (up to 18 batches)
- selenium phase lipid data (up to 18 batches)
- selenium phase percent moisture data (up to 18 batches)

The contractor shall provide support for other QA activities, including, but not limited to, the following:

- preparing revisions to update the Fish Plug Evaluation Study sample analysis PQAPP, as necessary
- developing chemical-specific analytical QA summaries for the Fish Plug Evaluation Study and combining the individual summaries into a project-specific QA report, as applicable

The contractor shall prepare chemical-specific analytical QA summaries after completing the QA data review for each Fish Plug Evaluation Study target chemical (i.e., mercury and selenium). These analytical QA summaries shall consist of text and graphics that describe the results of each target chemical analytical data quality review and qualification of any analytical results during the data quality review process. The contractor shall develop the analytical QA summaries using content and formats consistent with the content and formats used to develop project-specific QA reports. For each of the chemical-specific analytical QA summaries, the contractor shall prepare and submit an initial draft and draft final analytical QA summary for WACOR review. The contractor shall incorporate WACOR comments on the initial draft and draft final analytical QA summaries to produce the draft final and final analytical QA summaries, respectively. The WACOR will review and approve the final Fish Plug Evaluation Study analytical QA summaries. As applicable, the contractor shall combine the individual mercury and selenium phase QA summaries into a single project-specific QA report, using QA reports developed for previous fish tissue studies as templates for development of the Fish Plug Evaluation Study QA report. The contractor shall prepare a draft and draft final QA report for WACOR review and

incorporate WACOR comments to product the final QA report. The WACOR will review and approve the final Fish Plug Evaluation Study QA report.

Task 3.2 Deliverables: Data review monthly progress reports; Draft, draft final, and final chemical-specific analytical QA summaries and Fish Plug Evaluation Study QA report.

3.3 Data Management Support

The contractor shall provide both manual and automated systems to manage chemical data and related study information for the Fish Plug Evaluation Study. The contractor shall utilize these systems to conduct the following types of activities:

- chemical data receipt, storage, and retrieval
- organization and maintenance of project-specific data, which incorporates the chemical data for the study and the associated field data and statistical information
- sample analysis tracking
- development of analytical and related data files for statistical analyses
- preparation of computerized reports to identify errors, to provide information for management briefings or technical presentations, and to produce data summaries or graphics for various applications

The contractor shall receive and store chemical data and related study information for the Fish Plug Evaluation Study. These data will typically be in electronic formats, but some data and study information may be delivered as hard copy. The contractor shall maintain an automated inventory of these data and related information and shall provide a secure facility to store the study data in an organized, retrievable manner.

The contractor shall prepare statistical analysis files for the mercury and selenium phases of the Fish Plug Evaluation Study. The contractor shall develop these files in Excel format unless the otherwise specified by the WACOR. Initially, the contractor shall prepare draft mercury and selenium statistical analysis files using applicable fields from previous fish tissue study statistical input files as a template. The contractor shall incorporate QC review comments from the WACOR to prepare the final mercury and selenium statistical analysis files.

The contractor shall incorporate the remaining fillet tissue data into the existing Fish Plug Evaluation Study database that was developed with Microsoft Access software to efficiently receive, store, manipulate, and retrieve field, laboratory, and statistical data and project information related to this study. The contractor shall prepare and submit documentation on the structure, content, organization, and function of the database consistent with a user manual format. The contractor shall also provide continued technical support for maintenance of this Access database that includes, but is not limited to, testing for data completeness and accuracy and incorporation of data security measures to maintain the integrity and security of the Fish Plug Evaluation Study data.

Task 3.3 Deliverables: Final Fish Plug Evaluation Study Access database with documentation; Draft and final analytical results files for mercury and for selenium and percent moisture.

3.4 Data Analysis and Reporting Support

The contractor shall provide support for analyzing and reporting Fish Plug Evaluation Study fillet tissue data. The objective for statistical analysis of these data is to apply statistical tests that can assess similarities and differences among the various sets of fillet tissue data for the three tissue types (e.g., field-based fillet plug mercury data, lab-based fillet plug mercury data, and lab-based homogenized whole fillet tissue mercury data) and for other variables (e.g., species and waterbody types). Statistical analysis and data reporting support shall include, but is not limited to, the following:

- Developing and implementing a statistical analysis plan
- Reporting the statistical analysis results and the interpretation of the results
- Summarizing the analytical and statistical results for the Fish Plug Evaluation Study

The contractor shall provide support for developing and implementing a statistical analysis plan for the Fish Plug Evaluation Study fillet tissue data. The statistical analysis plan shall identify and describe the statistical analysis objectives, the fillet tissue data sets available for analysis, the statistical tests and test parameters that will be applied in comparing the various fillet tissue data sets, and the specific comparisons that will be performed between and among various fillet tissue data sets. The contractor shall prepare a draft statistical analysis plan, submit it to the WACOR for review, and incorporate WACOR comments on the draft statistical analysis plan to produce the final statistical analysis plan. The statistical analysis plan will also undergo independent technical review, and the WACOR will provide independent review comments to incorporate into the statistical analysis plan, as applicable. The WACOR will review and approve the final statistical analysis plan prior to the contractor initiating implementation of the plan.

The contractor shall prepare a statistical analysis report that includes the statistical analysis results for the fillet tissue data from the Fish Plug Evaluation Study data and the interpretation of these results. The contractor shall develop a draft report outline for WACOR review and incorporate WACOR comments on the draft outline to produce the final report outline. The WACOR will review and approve the final report outline prior to the contractor beginning development of the statistical analysis report. In developing the statistical analysis report, the contractor shall prepare a draft report for WACOR and independent technical review and incorporate WACOR and independent reviewer comments on the draft report to produce the final report. The WACOR will review and approve the final statistical analysis report. After final report approval, the contractor shall prepare and deliver electronic copies of the final statistical analysis report in two formats, Word and PDF.

The contractor shall prepare materials (text and graphics) summarizing the analytical and statistical results for the Fish Plug Evaluation Study fillet tissue data for incorporation of these results into technical presentations, reports, and journal articles. The contractor shall provide a draft of all analytical and statistical result summaries to the WACOR for review and prepare the final analytical and statistical result summaries based on WACOR comments on the corresponding draft result summaries. The WACOR will review and approve the final analytical and statistical result summaries.

Task 3.4 Deliverables: Draft and final statistical analysis plan; Draft and final statistical analysis

report outline; Draft and final statistical analysis report; Draft and final analytical and statistical result summaries.

Task 4: General Technical Support for Contaminant Surveillance Monitoring in U.S. Waters

The contractor shall provide general technical support for surveillance monitoring of fish tissue for contaminants of concern relative to water quality and human health. This support may include, but is not limited to, the following activities:

- planning for future studies or enhancement of existing studies (e.g., NCCA 2020 Great Lakes Human Health Fish Fillet Tissue Study)
- preparation of data and related files (e.g., data dictionaries) in response to requests for EPA fish tissue study data
- literature searches and other research to support fish tissue study planning and reporting of fish tissue study results and to develop EPA documents related to evaluating contaminants in fish and assessing human health risks from fish consumption
- identification, development, assessment, costing, and tracking of new technologies for sampling and analysis, for monitoring, and for threat identification and potential impacts relative to protection of water quality and human health
- technical and statistical support for development or review of technical presentations and reports related to EPA fish tissue studies
- coordination, facilitation, and/or performance of technical expert reviews related to analysis of fish tissue samples for contaminants of concern (e.g., draft analytical methods)
- participation on conference calls or webinars and at meetings, workshops, training events, or conferences as technical experts on analytical activities related to existing and future EPA fish tissue studies or to related studies
- development of technical information in response to EPA management requests to provide support for assessment of fish tissue study results, articulation of project-specific accomplishments, identification of lessons learned, and various other applications
- attendance at fish study team meetings, which are generally held quarterly at EPA headquarters
- preparation for final disposition and storage of project data, other project records, and sample archives for EPA fish tissue studies

The contractor shall perform specific activities for Task 4 as assigned through written technical direction by the WACOR. For cost estimating purposes, assume support for the following activities during the work assignment period of performance:

- planning for the NCCA 2020 Great Lakes Human Health Fish Fillet Tissue Study, including activities related to fish sampling site selection, identification of target chemicals, and logistical support for fish sampling
- preparation of data and related files (e.g., data dictionaries) in response to 48 requests for EPA fish tissue study data
- technical support for revision of the *EPA Guidance for Assessing Chemical Contaminant Data for Use in Fish Advisories, Volume 1: Sampling and Analysis, Third Edition, November 2000* with emphasis on guidance document sections on

target chemicals and analysis of tissue samples
- statistical support for development or review of 5 technical presentations and reports
- participation as a technical expert on an average of one 60-minute conference call per month
- technical review of 12 presentations, reports, posters, etc. related to EPA fish tissue studies
- development of technical information related to EPA fish tissue studies in response to 18 EPA management requests
- attendance at quarterly fish study team meetings held at EPA headquarters in the Federal Triangle complex (Washington, DC)
- attendance at two scientific conferences with one or more sessions of presentations related to completed, ongoing, or planned work under EPA fish tissue studies (e.g., 2019 National Water Quality Monitoring Conference in Denver, CO during March 2019 and a TBD meeting during the WA period of performance, such as the EPA National Fish Forum)
- preparation of National Lake Fish Tissue Study, PPCP Fish Pilot Study, and 2008-09 NRSA project data and other records for final disposition

Deliverables: Various technical support deliverables per technical direction.

IV. SCHEDULE OF DELIVERABLES:

Task	Deliverable	Schedule
0	Work plan	As per submission requirement in contract
0	Monthly progress and financial progress reports	As per submission requirement in contract
0	Monthly QA activity and issue summary	As per submission requirement in contract
0	QAPP checklists	As per submission requirement in contract
1.1	Fish sampling supplies	As directed by the WACOR through written technical direction
1.1	2018-19 NRSA fish sampling kit shipment delivery notification	Day of shipment delivery
1.1	2018-19 NRSA fish sample shipment delivery notification	Day of shipment delivery
1.1	2018-19 NRSA fish sample shipment condition notification	Within 24 hours of shipment delivery
1.2	Draft SOWs for target chemical analyses of 2018-19 NRSA fillet tissue samples Final SOWs for target chemical analyses of 2018-19 NRSA fillet samples	As directed by the WACOR through written technical direction Within 2 days after receipt of WACOR comments

1.2	Draft 2018-19 NRSA PQAPP for target chemical analyses of fillet tissue samples Draft final 2018-19 NRSA PQAPP for target chemical analyses of fillet tissue samples Final 2018-19 NRSA PQAPP for target chemical analyses of fillet tissue samples	As directed by the WACOR through written technical direction 4 days after receipt of WACOR comments 2 days after receipt of signatures from approvers
1.2	Coordination of 2015 GLHHFFTS fillet tissue sample shipments to Clarkson University lab for CEC analysis and of 2018-19 NRSA fillet tissue sample shipments to designated labs for target chemical analyses	Initiation of shipments as required for conformance with laboratory data delivery schedules
1.2	2015 GLHHFFTS and 2018-19 NRSA fillet tissue sample shipment delivery notifications	Day of shipment delivery
1.2	2015 GLHHFFTS and 2018-19 NRSA fillet tissue sample shipment condition notifications	Within 24 hours of shipment delivery
1.2	2015 GLHHFFTS CEC and 2018-19 NRSA analytical results	As per laboratory data delivery schedule
1.2	Archived fish tissue sample inventories	Within one month of addition or removal of samples from the repository (storage freezer)
1.3	Data review monthly progress reports	The final day of the month for months where analytical data are delivered and/or reviewed
1.3	Draft final and final 2010 GLHHFTS analytical QA reports	One week after receipt of WACOR comments on each version
1.3	Draft final and final 2013-14 NRSA analytical QA reports	One week after receipt of WACOR comments on each version
1.3	Draft 2015 GLHHFFTS analytical QA report Draft final and final 2015 GLHHFFTS analytical QA reports	Within 6 weeks after completing CEC analytical data quality review One week after receipt of WACOR comments on each version
1.3	Materials documenting other analytical QA activities	As directed by the WACOR through written technical direction
1.4	Incorporation of CEC analytical and QA review results into the 2015 GLHHFFTS Access database	Within 3 weeks after completion of the QA reviews for each of the analytical data sets
1.4	Development of structure for new Access database for the 2018-19 NRSA	Prior to delivery of the analytical results for the first batch of fillet tissue samples
1.4	User documentation for EPA fish tissue study Access databases	As directed by the WACOR through written technical direction
1.4	Responses to data/information requests for OST fish studies	Within 3 days after receipt of request from WACOR

1.5	Revisions of existing fish study data files for online release	As directed by the WACOR through written technical direction
1.5	Comparative analyses of target chemical data	As directed by the WACOR through written technical direction
2.1	Technical document materials	As directed by the WACOR through written technical direction
2.2	Outreach materials	As directed by the WACOR through written technical direction
3.1	Fish Plug Evaluation Study fillet tissue sample shipment delivery notification	Day of shipment delivery
3.1	Fish Plug Evaluation Study fillet tissue sample shipment condition notification	Within 24 hours of shipment delivery
3.1	Fish Plug Evaluation Study analytical results for mercury and paired analytical results for selenium and percent moisture	As per laboratory data delivery schedule
3.2	Data review monthly progress reports for the Fish Plug Evaluation Study analytical data	The final day of the month for months where analytical data are delivered and/or reviewed
3.2	Draft, draft final, and final chemical-specific analytical QA summaries and QA report for the Fish Plug Evaluation Study	As directed by the WACOR through written technical direction
3.3	Fish Plug Evaluation Study Access database that includes field, analytical, and QA review data/information	Within one month after completion of QA review of all mercury and selenium data
3.3	Fish Plug Evaluation Study Access database documentation	As directed by the WACOR through written technical direction
3.3	Draft Fish Plug Evaluation Study analytical results files for mercury and for selenium + percent moisture data Final Fish Plug Evaluation Study analytical results files for mercury and for selenium + percent moisture data	Within 3 weeks after completion of data quality review of the analytical data for each chemical Within 3 days after receipt of WACOR review comments
3.4	Draft and final Fish Plug Evaluation Study statistical analysis plan	As directed by the WACOR through written technical direction
3.4	Draft and final Fish Plug Evaluation Study statistical analysis report outline Draft and final Fish Plug Evaluation Study statistical analysis report	As directed by the WACOR through written technical direction As directed by the WACOR through written technical direction
3.4	Draft and final Fish Plug Evaluation Study analytical and statistical result summaries	As directed by the WACOR through written technical direction
4	General technical support deliverables	As directed by the WACOR through written technical direction

V. MISCELLANEOUS:

Software Application Files and Accessibility:
Software application files, if delivered to the Government, shall conform to the requirements relating to accessibility as detailed to the 1998 amendments to the Rehabilitation Act, particularly, but not limited to, § 1194.21 Software applications and operating systems and § 1194.22 Web-based intranet and internet information and applications. See: http://www.section508.gov/

Preferred text format:	MS Word 8.0 or higher (Office 2007 or higher)
Preferred presentation format:	Power Point, Office 2007 or higher
Preferred graphics format:	Each graphic is an individual GIF file
Preferred portable format:	Adobe Acrobat, version 6.0

The EPA WACOR shall identify which of delivered products will require 508 compliance.

VI. TRAVEL

The contractor shall anticipate attendance at two scientific conferences with one or more sessions of presentations related to completed, ongoing, or planned work under EPA's fish tissue studies as described under Task 4. One of these conferences will be the 2019 National Water Quality Monitoring Conference scheduled in Denver, CO during March 25-29, 2019. Task 4 also specifies local travel to quarterly meetings at EPA headquarters in the Federal Triangle complex in Washington, DC.

VII. MEETINGS, CONFERENCES, TRAINING EVENTS, AWARD CEREMONIES, AND RECEPTIONS

All appropriate clearances and approvals required by Agency policy in support of any and all conference related activities and expenses, including support of meetings, conferences, training events, award ceremonies and receptions, including the form 5170 for all meetings costing more than $20,000, shall be obtained by the EPA CL-COR as needed and provided to the Contracting Officer (CO). Work under conference related activities and expenses shall not occur until this approval is obtained and provided by the EPA CL-COR.

The tasks under this work assignment do not require the acquisition of "off-site" facilities for conferences and meetings as defined in the IPN 12-05. AND the events associated with this work assignment are not covered by EPA Order 1900.3 and do not require EPA Form 5170.

VIII. CONTRACTOR IDENTIFICATION

Contractor personnel shall always identify themselves as contractor employees by name and organization and physically display that information through an identification badge. Contractor personnel are prohibited from acting as the Agency's official representative. The contractor shall refer any questions relating to the interpretation of EPA policy, guidance, or regulation to the CO, CL-COR and/or WACOR.

IX. PRINTING

All copying and printing shall be accomplished within the limitations of the printing clause of the contract.

X. QUALITY ASSURANCE SURVEILLANCE PLAN:

All tasks identified in the performance work statement above are subject to review and approval by the EPA WACOR based on the general guidelines of the contract quality assurance surveillance plan regarding in accordance with Attachment 4 of the contract: Programmatic, cost control, timeliness/deliverables, and document development standards.

EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 03-26

☐ Other ☒ Amendment Number: 000001

Contract Number	Contract Period	Title of Work Assignment/SF Site Name
EP-C-15-012	08/01/2015 To 07/31/2020 Base Option Period Number 3	Support for Fish Contamination

Contractor: CSRA LLC

Specify Section and paragraph of Contract SOW: 2.8, 2.15, 2.16, 2.17, 3.14, 3.1.13, 3.1.19

Purpose:
- ☐ Work Assignment
- ☒ Work Assignment Amendment
- ☐ Work Plan Approval
- ☐ Work Assignment Close-Out
- ☐ Incremental Funding

Period of Performance: From 08/01/2018 To 07/31/2019

Comments:
The purpose of this amendment 1 to CSRA (EP-C-15-012) WA 03-26 is to increase the CPFF NTE ceiling to $600,000.

☐ Superfund — Accounting and Appropriations Data — ☒ Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*) ☐

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

	Cost/Fee:	LOE:
Contract Period: 08/01/2015 To 07/31/2020		3,450
This Action:		0
Total:		3,450

Work Plan / Cost Estimate Approvals

	Cost/Fee	LOE:
Contractor WP Dated:		
Cumulative Approved:		

Work Assignment Manager Name: Leanne Stahl (Signature) (Date)	Branch/Mail Code:	
	Phone Number:	202-566-0404
	FAX Number:	
Project Officer Name: Nancy Parrotta (Signature) (Date)	Branch/Mail Code:	
	Phone Number:	202-564-5260
	FAX Number:	
Other Agency Official Name (Signature) (Date)	Branch/Mail Code:	
	Phone Number:	
	FAX Number:	
Contracting Official Name: Donna Reinhart (Signature) (Date)	Branch/Mail Code:	
	Phone Number:	513-487-2114
	FAX Number:	